Form 5500

Department of the Treasury
Internal Revenue Service

Department of Labor
Employee Benefits Security Administration

Pension Benefit Guaranty Corporation

Annual Return/Report of Employee Benefit Plan

This form is required to be filed for employee benefit plans under sections 104 and 4065 of the Employee Retirement Income Security Act of 1974 (ERISA) and sections 6057(b) and 6058(a) of the Internal Revenue Code (the Code).

▶ **Complete all entries in accordance with the instructions to the Form 5500.**

OMB Nos. 1210-0110
1210-0089

2018

This Form is Open to Public Inspection

Part I Annual Report Identification Information

For calendar plan year 2018 or fiscal plan year beginning 01/01/2018 and ending 12/31/2018

A This return/report is for:
- [ ] a multiemployer plan
- [X] a multiple-employer plan (Filers checking this box must attach a list of participating employer information in accordance with the form instructions.)
- [ ] a single-employer plan
- [ ] a DFE (specify) ____

B This return/report is:
- [ ] the first return/report
- [ ] the final return/report
- [X] an amended return/report
- [ ] a short plan year return/report (less than 12 months)

C If the plan is a collectively-bargained plan, check here. . . . . ▶ [X]

D Check box if filing under:
- [X] Form 5558
- [ ] automatic extension
- [ ] the DFVC program
- [ ] special extension (enter description)

Part II Basic Plan Information—enter all requested information

1a Name of plan
RETIREMENT&SECURITY PROGRAM FOR EMPLOYEES OF NTCA AND ITS MEMBERS

1b Three-digit plan number (PN) ▶ 333

1c Effective date of plan 01/01/1959

2a Plan sponsor's name (employer, if for a single-employer plan)
Mailing address (include room, apt., suite no. and street, or P.O. Box)
City or town, state or province, country, and ZIP or foreign postal code (if foreign, see instructions)
NATIONAL TELECOMMUNICATIONS COOPERATIVE ASSOCIATION

4121 WILSON BLVD
10TH FLOOR
ARLINGTON, VA 22203-1801

2b Employer Identification Number (EIN)
52-0741336

2c Plan Sponsor's telephone number
703-351-2000

2d Business code (see instructions)
517000

Caution: A penalty for the late or incomplete filing of this return/report will be assessed unless reasonable cause is established.

Under penalties of perjury and other penalties set forth in the instructions, I declare that I have examined this return/report, including accompanying schedules, statements and attachments, as well as the electronic version of this return/report, and to the best of my knowledge and belief, it is true, correct, and complete.

SIGN HERE	Filed with authorized/valid electronic signature.	10/14/2019	SCOTT GARDNER, DIRECTOR OF PENSION
	Signature of plan administrator	Date	Enter name of individual signing as plan administrator
SIGN HERE			
	Signature of employer/plan sponsor	Date	Enter name of individual signing as employer or plan sponsor
SIGN HERE			
	Signature of DFE	Date	Enter name of individual signing as DFE

3a Plan administrator's name and address ☐ Same as Plan Sponsor

NTCA RETIREMENT AND SECURITY/ SAVINGS PLAN TRUST COMMITTEE

C/O 4121 WILSON BLVD, 10TH FLOOR
ARLINGTON, VA 22203-1801

3b Administrator's EIN
52-1558805

3c Administrator's telephone number
703-351-2000

4 If the name and/or EIN of the plan sponsor or the plan name has changed since the last return/report filed for this plan, enter the plan sponsor's name, EIN, the plan name and the plan number from the last return/report:
a Sponsor's name
c Plan Name

4b EIN

4d PN

5 Total number of participants at the beginning of the plan year	**5**	16884
6 Number of participants as of the end of the plan year unless otherwise stated (welfare plans complete only lines **6a(1), 6a(2), 6b, 6c,** and **6d**).		
a(1) Total number of active participants at the beginning of the plan year	**6a(1)**	11924
a(2) Total number of active participants at the end of the plan year	**6a(2)**	11054
b Retired or separated participants receiving benefits	**6b**	2045
c Other retired or separated participants entitled to future benefits	**6c**	2672
d Subtotal. Add lines **6a(2)**, **6b**, and **6c**	**6d**	15771
e Deceased participants whose beneficiaries are receiving or are entitled to receive benefits.	**6e**	330
f Total. Add lines **6d** and **6e**.	**6f**	16101
g Number of participants with account balances as of the end of the plan year (only defined contribution plans complete this item)	**6g**	
h Number of participants who terminated employment during the plan year with accrued benefits that were less than 100% vested	**6h**	
7 Enter the total number of employers obligated to contribute to the plan (only multiemployer plans complete this item)	**7**	

8a If the plan provides pension benefits, enter the applicable pension feature codes from the List of Plan Characteristics Codes in the instructions:

1A 1E 3H 3B

b If the plan provides welfare benefits, enter the applicable welfare feature codes from the List of Plan Characteristics Codes in the instructions:

9a Plan funding arrangement (check all that apply)		**9b** Plan benefit arrangement (check all that apply)	
(1)	☐ Insurance	**(1)**	☐ Insurance
(2)	☐ Code section 412(e)(3) insurance contracts	**(2)**	☐ Code section 412(e)(3) insurance contracts
(3)	☒ Trust	**(3)**	☒ Trust
(4)	☐ General assets of the sponsor	**(4)**	☐ General assets of the sponsor

10 Check all applicable boxes in 10a and 10b to indicate which schedules are attached, and, where indicated, enter the number attached. (See instructions)

a Pension Schedules

- **(1)** ☒ **R** (Retirement Plan Information)
- **(2)** ☐ **MB** (Multiemployer Defined Benefit Plan and Certain Money Purchase Plan Actuarial Information) - signed by the plan actuary
- **(3)** ☒ **SB** (Single-Employer Defined Benefit Plan Actuarial Information) - signed by the plan actuary

b General Schedules

- **(1)** ☒ **H** (Financial Information)
- **(2)** ☐ **I** (Financial Information – Small Plan)
- **(3)** ☐ **A** (Insurance Information)
- **(4)** ☒ **C** (Service Provider Information)
- **(5)** ☒ **D** (DFE/Participating Plan Information)
- **(6)** ☐ **G** (Financial Transaction Schedules)

Part III Form M-1 Compliance Information (to be completed by welfare benefit plans)

11a If the plan provides welfare benefits, was the plan subject to the Form M-1 filing requirements during the plan year? (See instructions and 29 CFR 2520.101-2.) ..... ☐ Yes ☐ No

If "Yes" is checked, complete lines 11b and 11c.

11b Is the plan currently in compliance with the Form M-1 filing requirements? (See instructions and 29 CFR 2520.101-2.) ..... ☐ Yes ☐ No

11c Enter the Receipt Confirmation Code for the 2018 Form M-1 annual report. If the plan was not required to file the 2018 Form M-1 annual report, enter the Receipt Confirmation Code for the most recent Form M-1 that was required to be filed under the Form M-1 filing requirements. (Failure to enter a valid Receipt Confirmation Code will subject the Form 5500 filing to rejection as incomplete.)

Receipt Confirmation Code_____

SCHEDULE SB (Form 5500)

Department of the Treasury
Internal Revenue Service

Department of Labor
Employee Benefits Security Administration

Pension Benefit Guaranty Corporation

Single-Employer Defined Benefit Plan Actuarial Information

This schedule is required to be filed under section 104 of the Employee Retirement Income Security Act of 1974 (ERISA) and section 6059 of the Internal Revenue Code (the Code).

▶ **File as an attachment to Form 5500 or 5500-SF.**

OMB No. 1210-0110

2018

This Form is Open to Public Inspection

For calendar plan year 2018 or fiscal plan year beginning 01/01/2018 and ending 12/31/2018

▶ **Round off amounts to nearest dollar.**

▶ **Caution:** A penalty of $1,000 will be assessed for late filing of this report unless reasonable cause is established.

A Name of plan
RETIREMENT&SECURITY PROGRAM FOR EMPLOYEES OF NTCA AND ITS MEMBERS

B Three-digit plan number (PN) ▶ 333

C Plan sponsor's name as shown on line 2a of Form 5500 or 5500-SF
NATIONAL TELECOMMUNICATIONS COOPERATIVE ASSOCIATION

D Employer Identification Number (EIN)
52-0741336

E Type of plan: ☐ Single ☐ Multiple-A ☒ Multiple-B

F Prior year plan size: ☐ 100 or fewer ☐ 101-500 ☒ More than 500

Part I Basic Information

1 Enter the valuation date: Month 01 Day 01 Year 2018

2 Assets:

a Market value	**2a**	2233935111
b Actuarial value	**2b**	2097817954

3 Funding target/participant count breakdown

	(1) Number of participants	(2) Vested Funding Target	(3) Total Funding Target
a For retired participants and beneficiaries receiving payment	2421	675929280	675929280
b For terminated vested participants	2234	61692775	61692775
c For active participants	12092	1243990673	1465963971
d Total	16747	1981612728	2203586026

4 If the plan is in at-risk status, check the box and complete lines (a) and (b) ☐

a Funding target disregarding prescribed at-risk assumptions	**4a**	
b Funding target reflecting at-risk assumptions, but disregarding transition rule for plans that have been in at-risk status for fewer than five consecutive years and disregarding loading factor	**4b**	
5 Effective interest rate	**5**	5.89 %
6 Target normal cost	**6**	105413121

Statement by Enrolled Actuary

To the best of my knowledge, the information supplied in this schedule and accompanying schedules, statements and attachments, if any, is complete and accurate. Each prescribed assumption was applied in accordance with applicable law and regulations. In my opinion, each other assumption is reasonable (taking into account the experience of the plan and reasonable expectations) and such other assumptions, in combination, offer my best estimate of anticipated experience under the plan.

SIGN HERE

Signature of actuary	Date: 10/03/2019
MARY E GIBBON	Most recent enrollment number: 17-06921
Type or print name of actuary	
WILLIS TOWERS WATSON US LLC	Telephone number (including area code): 703-258-8000
Firm name	
800 N. GLEBE ROAD ARLINGTON, VA 22203	
Address of the firm	

If the actuary has not fully reflected any regulation or ruling promulgated under the statute in completing this schedule, check the box and see instructions ☐

Part II Beginning of Year Carryover and Prefunding Balances

		(a) Carryover balance	(b) Prefunding balance
7	Balance at beginning of prior year after applicable adjustments (line 13 from prior year)		
8	Portion elected for use to offset prior year's funding requirement (line 35 from prior year)		
9	Amount remaining (line 7 minus line 8)	0	0
10	Interest on line 9 using prior year's actual return of _____%	0	0
11	Prior year's excess contributions to be added to prefunding balance:		
	a Present value of excess contributions (line 38a from prior year)		
	b(1) Interest on the excess, if any, of line 38a over line 38b from prior year Schedule SB, using prior year's effective interest rate of 6.07%		
	b(2) Interest on line 38b from prior year Schedule SB, using prior year's actual return		
	c Total available at beginning of current plan year to add to prefunding balance		0
	d Portion of (c) to be added to prefunding balance		
12	Other reductions in balances due to elections or deemed elections		
13	Balance at beginning of current year (line 9 + line 10 + line 11d – line 12)	0	0

Part III Funding Percentages

14	Funding target attainment percentage	14	95.20%
15	Adjusted funding target attainment percentage	15	%
16	Prior year's funding percentage for purposes of determining whether carryover/prefunding balances may be used to reduce current year's funding requirement	16	%
17	If the current value of the assets of the plan is less than 70 percent of the funding target, enter such percentage.	17	%

Part IV Contributions and Liquidity Shortfalls

18 Contributions made to the plan for the plan year by employer(s) and employees:

(a) Date (MM-DD-YYYY)	(b) Amount paid by employer(s)	(c) Amount paid by employees	(a) Date (MM-DD-YYYY)	(b) Amount paid by employer(s)	(c) Amount paid by employees
01/01/2018	109013848	19339718			
			Totals ► 18(b)	109013848	18(c) 19339718

19	Discounted employer contributions – see instructions for small plan with a valuation date after the beginning of the year:		
	a Contributions allocated toward unpaid minimum required contributions from prior years	19a	
	b Contributions made to avoid restrictions adjusted to valuation date	19b	
	c Contributions allocated toward minimum required contribution for current year adjusted to valuation date	19c	

20 Quarterly contributions and liquidity shortfalls:

a Did the plan have a "funding shortfall" for the prior year? ☐ Yes ☒ No

b If line 20a is "Yes," were required quarterly installments for the current year made in a timely manner? ☐ Yes ☐ No

c If line 20a is "Yes," see instructions and complete the following table as applicable:

Liquidity shortfall as of end of quarter of this plan year

(1) 1st	(2) 2nd	(3) 3rd	(4) 4th

Part V Assumptions Used to Determine Funding Target and Target Normal Cost

21 Discount rate:

a Segment rates:

1st segment:	2nd segment:	3rd segment:	
3.92%	5.52%	6.29%	☐ N/A, full yield curve used

b Applicable month (enter code) **21b** 4

22 Weighted average retirement age **22** 62

23 Mortality table(s) (see instructions)

Prior regulation: ☐ Prescribed - combined ☐ Prescribed - separate ☐ Substitute

Current regulation: ☐ Prescribed - combined ☒ Prescribed - separate ☐ Substitute

Part VI Miscellaneous Items

24 Has a change been made in the non-prescribed actuarial assumptions for the current plan year? If "Yes," see instructions regarding required attachment. ☐ Yes ☐ No

25 Has a method change been made for the current plan year? If "Yes," see instructions regarding required attachment. ☐ Yes ☐ No

26 Is the plan required to provide a Schedule of Active Participants? If "Yes," see instructions regarding required attachment. ☐ Yes ☐ No

27 If the plan is subject to alternative funding rules, enter applicable code and see instructions regarding attachment **27** 1

Part VII Reconciliation of Unpaid Minimum Required Contributions For Prior Years

28 Unpaid minimum required contributions for all prior years **28**

29 Discounted employer contributions allocated toward unpaid minimum required contributions from prior years (line 19a) **29**

30 Remaining amount of unpaid minimum required contributions (line 28 minus line 29) **30** 0

Part VIII Minimum Required Contribution For Current Year

31 Target normal cost and excess assets (see instructions):

a Target normal cost (line 6) **31a** 105413121

b Excess assets, if applicable, but not greater than line 31a **31b** 0

32 Amortization installments:	Outstanding Balance	Installment
a Net shortfall amortization installment		
b Waiver amortization installment		

33 If a waiver has been approved for this plan year, enter the date of the ruling letter granting the approval (Month _____ Day _____ Year _____) and the waived amount **33**

34 Total funding requirement before reflecting carryover/prefunding balances (lines 31a - 31b + 32a + 32b - 33) **34** 105413121

	Carryover balance	Prefunding balance	Total balance
35 Balances elected for use to offset funding requirement			0

36 Additional cash requirement (line 34 minus line 35) **36** 105413121

37 Contributions allocated toward minimum required contribution for current year adjusted to valuation date (line 19c) **37**

38 Present value of excess contributions for current year (see instructions)

a Total (excess, if any, of line 37 over line 36) **38a** 0

b Portion included in line 38a attributable to use of prefunding and funding standard carryover balances **38b**

39 Unpaid minimum required contribution for current year (excess, if any, of line 36 over line 37) **39** 105413121

40 Unpaid minimum required contributions for all years **40** 105413121

Part IX Pension Funding Relief Under Pension Relief Act of 2010 (See Instructions)

41 If an election was made to use PRA 2010 funding relief for this plan:

a Schedule elected ☐ 2 plus 7 years ☐ 15 years

b Eligible plan year(s) for which the election in line 41a was made ☐ 2008 ☐ 2009 ☐ 2010 ☐ 2011

SCHEDULE C (Form 5500)	Service Provider Information	OMB No. 1210-0110
Department of the Treasury Internal Revenue Service Department of Labor Employee Benefits Security Administration Pension Benefit Guaranty Corporation	This schedule is required to be filed under section 104 of the Employee Retirement Income Security Act of 1974 (ERISA). ▶ **File as an attachment to Form 5500.**	**2018** **This Form is Open to Public Inspection.**

For calendar plan year 2018 or fiscal plan year beginning 01/01/2018 and ending 12/31/2018

A Name of plan	**B** Three-digit plan number (PN) ▶
RETIREMENT&SECURITY PROGRAM FOR EMPLOYEES OF NTCA AND ITS MEMBERS	333
C Plan sponsor's name as shown on line 2a of Form 5500	**D** Employer Identification Number (EIN)
NATIONAL TELECOMMUNICATIONS COOPERATIVE ASSOCIATION	52-0741336

Part I Service Provider Information (see instructions)

You must complete this Part, in accordance with the instructions, to report the information required for **each person** who received, directly or indirectly, $5,000 or more in total compensation (i.e., money or anything else of monetary value) in connection with services rendered to the plan or the person's position with the plan during the plan year. If a person received **only** eligible indirect compensation for which the plan received the required disclosures, you are required to answer line 1 but are not required to include that person when completing the remainder of this Part.

1 Information on Persons Receiving Only Eligible Indirect Compensation

a Check "Yes" or "No" to indicate whether you are excluding a person from the remainder of this Part because they received only eligible indirect compensation for which the plan received the required disclosures (see instructions for definitions and conditions). . . . . ☐ Yes ☒ No

b If you answered line 1a "Yes," enter the name and EIN or address of each person providing the required disclosures for the service providers who received only eligible indirect compensation. Complete as many entries as needed (see instructions).

(b) Enter name and EIN or address of person who provided you disclosures on eligible indirect compensation

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2. Information on Other Service Providers Receiving Direct or Indirect Compensation. Except for those persons for whom you answered "Yes" to line 1a above, complete as many entries as needed to list each person receiving, directly or indirectly, $5,000 or more in total compensation (i.e., money or anything else of value) in connection with services rendered to the plan or their position with the plan during the plan year. (See instructions).

(a) Enter name and EIN or address (see instructions)

SERVICES MANAGEMENT CORPORATION

52-1200541

(b) Service Code(s)	(c) Relationship to employer, employee organization, or person known to be a party-in-interest	(d) Enter direct compensation paid by the plan. If none, enter -0-.	(e) Did service provider receive indirect compensation? (sources other than plan or plan sponsor)	(f) Did indirect compensation include eligible indirect compensation, for which the plan received the required disclosures?	(g) Enter total indirect compensation received by service provider excluding eligible indirect compensation for which you answered "Yes" to element (f). If none, enter -0-.	(h) Did the service provider give you a formula instead of an amount or estimated amount?
13 50	SUBSIDIARY OF NTCA	2867577	Yes [ ] No [X]	Yes [ ] No [ ]		Yes [ ] No [ ]

(a) Enter name and EIN or address (see instructions)

TOWERS WATSON

53-0181291

(b) Service Code(s)	(c) Relationship to employer, employee organization, or person known to be a party-in-interest	(d) Enter direct compensation paid by the plan. If none, enter -0-.	(e) Did service provider receive indirect compensation? (sources other than plan or plan sponsor)	(f) Did indirect compensation include eligible indirect compensation, for which the plan received the required disclosures?	(g) Enter total indirect compensation received by service provider excluding eligible indirect compensation for which you answered "Yes" to element (f). If none, enter -0-.	(h) Did the service provider give you a formula instead of an amount or estimated amount?
11 50	NONE	754271	Yes [ ] No [X]	Yes [ ] No [ ]		Yes [ ] No [ ]

(a) Enter name and EIN or address (see instructions)

GROOM LAW GROUP

52-1219029

(b) Service Code(s)	(c) Relationship to employer, employee organization, or person known to be a party-in-interest	(d) Enter direct compensation paid by the plan. If none, enter -0-.	(e) Did service provider receive indirect compensation? (sources other than plan or plan sponsor)	(f) Did indirect compensation include eligible indirect compensation, for which the plan received the required disclosures?	(g) Enter total indirect compensation received by service provider excluding eligible indirect compensation for which you answered "Yes" to element (f). If none, enter -0-.	(h) Did the service provider give you a formula instead of an amount or estimated amount?
29 50	NONE	269211	Yes [ ] No [X]	Yes [ ] No [ ]		Yes [ ] No [ ]

2. Information on Other Service Providers Receiving Direct or Indirect Compensation. Except for those persons for whom you answered "Yes" to line 1a above, complete as many entries as needed to list each person receiving, directly or indirectly, $5,000 or more in total compensation (i.e., money or anything else of value) in connection with services rendered to the plan or their position with the plan during the plan year. (See instructions).

(a) Enter name and EIN or address (see instructions)

STATE STREET BANK AND TRUST COMPANY

04-1867445

(b) Service Code(s)	(c) Relationship to employer, employee organization, or person known to be a party-in-interest	(d) Enter direct compensation paid by the plan. If none, enter -0-.	(e) Did service provider receive indirect compensation? (sources other than plan or plan sponsor)	(f) Did indirect compensation include eligible indirect compensation, for which the plan received the required disclosures?	(g) Enter total indirect compensation received by service provider excluding eligible indirect compensation for which you answered "Yes" to element (f). If none, enter -0-.	(h) Did the service provider give you a formula instead of an amount or estimated amount?
51 21	NONE	62687	Yes [X] No [ ]	Yes [X] No [ ]	0	Yes [ ] No [ ]

(a) Enter name and EIN or address (see instructions)

CLIFTONLARSONALLEN, LLP

47-0746749

(b) Service Code(s)	(c) Relationship to employer, employee organization, or person known to be a party-in-interest	(d) Enter direct compensation paid by the plan. If none, enter -0-.	(e) Did service provider receive indirect compensation? (sources other than plan or plan sponsor)	(f) Did indirect compensation include eligible indirect compensation, for which the plan received the required disclosures?	(g) Enter total indirect compensation received by service provider excluding eligible indirect compensation for which you answered "Yes" to element (f). If none, enter -0-.	(h) Did the service provider give you a formula instead of an amount or estimated amount?
10 50	NONE	36720	Yes [ ] No [ ]	Yes [ ] No [ ]		Yes [ ] No [ ]

(a) Enter name and EIN or address (see instructions)

ALLEGRA

56-2075508

(b) Service Code(s)	(c) Relationship to employer, employee organization, or person known to be a party-in-interest	(d) Enter direct compensation paid by the plan. If none, enter -0-.	(e) Did service provider receive indirect compensation? (sources other than plan or plan sponsor)	(f) Did indirect compensation include eligible indirect compensation, for which the plan received the required disclosures?	(g) Enter total indirect compensation received by service provider excluding eligible indirect compensation for which you answered "Yes" to element (f). If none, enter -0-.	(h) Did the service provider give you a formula instead of an amount or estimated amount?
49 50	NONE	12312	Yes [ ] No [X]	Yes [ ] No [ ]		Yes [ ] No [ ]

Part I Service Provider Information (continued)

3. If you reported on line 2 receipt of indirect compensation, other than eligible indirect compensation, by a service provider, and the service provider is a fiduciary or provides contract administrator, consulting, custodial, investment advisory, investment management, broker, or recordkeeping services, answer the following questions for (a) each source from whom the service provider received $1,000 or more in indirect compensation and (b) each source for whom the service provider gave you a formula used to determine the indirect compensation instead of an amount or estimated amount of the indirect compensation. Complete as many entries as needed to report the required information for each source.

(a) Enter service provider name as it appears on line 2	**(b)** Service Codes (see instructions)	**(c)** Enter amount of indirect compensation
(d) Enter name and EIN (address) of source of indirect compensation	**(e)** Describe the indirect compensation, including any formula used to determine the service provider's eligibility for or the amount of the indirect compensation.	

(a) Enter service provider name as it appears on line 2	**(b)** Service Codes (see instructions)	**(c)** Enter amount of indirect compensation
(d) Enter name and EIN (address) of source of indirect compensation	**(e)** Describe the indirect compensation, including any formula used to determine the service provider's eligibility for or the amount of the indirect compensation.	

(a) Enter service provider name as it appears on line 2	**(b)** Service Codes (see instructions)	**(c)** Enter amount of indirect compensation
(d) Enter name and EIN (address) of source of indirect compensation	**(e)** Describe the indirect compensation, including any formula used to determine the service provider's eligibility for or the amount of the indirect compensation.	

Part II Service Providers Who Fail or Refuse to Provide Information

4 Provide, to the extent possible, the following information for each service provider who failed or refused to provide the information necessary to complete this Schedule.

(a) Enter name and EIN or address of service provider (see instructions)	**(b)** Nature of Service Code(s)	**(c)** Describe the information that the service provider failed or refused to provide

(a) Enter name and EIN or address of service provider (see instructions)	**(b)** Nature of Service Code(s)	**(c)** Describe the information that the service provider failed or refused to provide

(a) Enter name and EIN or address of service provider (see instructions)	**(b)** Nature of Service Code(s)	**(c)** Describe the information that the service provider failed or refused to provide

(a) Enter name and EIN or address of service provider (see instructions)	**(b)** Nature of Service Code(s)	**(c)** Describe the information that the service provider failed or refused to provide

(a) Enter name and EIN or address of service provider (see instructions)	**(b)** Nature of Service Code(s)	**(c)** Describe the information that the service provider failed or refused to provide

(a) Enter name and EIN or address of service provider (see instructions)	**(b)** Nature of Service Code(s)	**(c)** Describe the information that the service provider failed or refused to provide

Part III Termination Information on Accountants and Enrolled Actuaries (see instructions)

(complete as many entries as needed)

a Name:	**b** EIN:
c Position:	
d Address:	**e** Telephone:

Explanation:

a Name:	**b** EIN:
c Position:	
d Address:	**e** Telephone:

Explanation:

a Name:	**b** EIN:
c Position:	
d Address:	**e** Telephone:

Explanation:

a Name:	**b** EIN:
c Position:	
d Address:	**e** Telephone:

Explanation:

a Name:	**b** EIN:
c Position:	
d Address:	**e** Telephone:

Explanation:

SCHEDULE D (Form 5500)

Department of the Treasury
Internal Revenue Service

Department of Labor
Employee Benefits Security Administration

DFE/Participating Plan Information

This schedule is required to be filed under section 104 of the Employee Retirement Income Security Act of 1974 (ERISA).

▶ **File as an attachment to Form 5500.**

OMB No. 1210-0110

2018

This Form is Open to Public Inspection.

For calendar plan year 2018 or fiscal plan year beginning 01/01/2018 and ending 12/31/2018

A Name of plan
RETIREMENT&SECURITY PROGRAM FOR EMPLOYEES OF NTCA AND ITS MEMBERS

B Three-digit plan number (PN) ▶ 333

C Plan or DFE sponsor's name as shown on line 2a of Form 5500
NATIONAL TELECOMMUNICATIONS COOPERATIVE ASSOCIATION

D Employer Identification Number (EIN)
52-0741336

Part I Information on interests in MTIAs, CCTs, PSAs, and 103-12 IEs (to be completed by plans and DFEs)

(Complete as many entries as needed to report all interests in DFEs)

a Name of MTIA, CCT, PSA, or 103-12 IE: R&S AND SAV PLAN OF NTCA MASTER TST

b Name of sponsor of entity listed in (a): NATIONAL TEL. COOP. ASSOCIATION

c EIN-PN	**d** Entity code	**e** Dollar value of interest in MTIA, CCT, PSA, or 103-12 IE at end of year (see instructions)
13-6044006-006	M	2128969118

a Name of MTIA, CCT, PSA, or 103-12 IE:

b Name of sponsor of entity listed in (a):

c EIN-PN	**d** Entity code	**e** Dollar value of interest in MTIA, CCT, PSA, or 103-12 IE at end of year (see instructions)

a Name of MTIA, CCT, PSA, or 103-12 IE:

b Name of sponsor of entity listed in (a):

c EIN-PN	**d** Entity code	**e** Dollar value of interest in MTIA, CCT, PSA, or 103-12 IE at end of year (see instructions)

a Name of MTIA, CCT, PSA, or 103-12 IE:

b Name of sponsor of entity listed in (a):

c EIN-PN	**d** Entity code	**e** Dollar value of interest in MTIA, CCT, PSA, or 103-12 IE at end of year (see instructions)

a Name of MTIA, CCT, PSA, or 103-12 IE:

b Name of sponsor of entity listed in (a):

c EIN-PN	**d** Entity code	**e** Dollar value of interest in MTIA, CCT, PSA, or 103-12 IE at end of year (see instructions)

a Name of MTIA, CCT, PSA, or 103-12 IE:

b Name of sponsor of entity listed in (a):

c EIN-PN	**d** Entity code	**e** Dollar value of interest in MTIA, CCT, PSA, or 103-12 IE at end of year (see instructions)

a Name of MTIA, CCT, PSA, or 103-12 IE:

b Name of sponsor of entity listed in (a):

c EIN-PN	**d** Entity code	**e** Dollar value of interest in MTIA, CCT, PSA, or 103-12 IE at end of year (see instructions)

a Name of MTIA, CCT, PSA, or 103-12 IE:

b Name of sponsor of entity listed in (a):

c EIN-PN	**d** Entity code	**e** Dollar value of interest in MTIA, CCT, PSA, or 103-12 IE at end of year (see instructions)

a Name of MTIA, CCT, PSA, or 103-12 IE:

b Name of sponsor of entity listed in (a):

c EIN-PN	**d** Entity code	**e** Dollar value of interest in MTIA, CCT, PSA, or 103-12 IE at end of year (see instructions)

a Name of MTIA, CCT, PSA, or 103-12 IE:

b Name of sponsor of entity listed in (a):

c EIN-PN	**d** Entity code	**e** Dollar value of interest in MTIA, CCT, PSA, or 103-12 IE at end of year (see instructions)

a Name of MTIA, CCT, PSA, or 103-12 IE:

b Name of sponsor of entity listed in (a):

c EIN-PN	**d** Entity code	**e** Dollar value of interest in MTIA, CCT, PSA, or 103-12 IE at end of year (see instructions)

a Name of MTIA, CCT, PSA, or 103-12 IE:

b Name of sponsor of entity listed in (a):

c EIN-PN	**d** Entity code	**e** Dollar value of interest in MTIA, CCT, PSA, or 103-12 IE at end of year (see instructions)

a Name of MTIA, CCT, PSA, or 103-12 IE:

b Name of sponsor of entity listed in (a):

c EIN-PN	**d** Entity code	**e** Dollar value of interest in MTIA, CCT, PSA, or 103-12 IE at end of year (see instructions)

a Name of MTIA, CCT, PSA, or 103-12 IE:

b Name of sponsor of entity listed in (a):

c EIN-PN	**d** Entity code	**e** Dollar value of interest in MTIA, CCT, PSA, or 103-12 IE at end of year (see instructions)

a Name of MTIA, CCT, PSA, or 103-12 IE:

b Name of sponsor of entity listed in (a):

c EIN-PN	**d** Entity code	**e** Dollar value of interest in MTIA, CCT, PSA, or 103-12 IE at end of year (see instructions)

a Name of MTIA, CCT, PSA, or 103-12 IE:

b Name of sponsor of entity listed in (a):

c EIN-PN	**d** Entity code	**e** Dollar value of interest in MTIA, CCT, PSA, or 103-12 IE at end of year (see instructions)

a Name of MTIA, CCT, PSA, or 103-12 IE:

b Name of sponsor of entity listed in (a):

c EIN-PN	**d** Entity code	**e** Dollar value of interest in MTIA, CCT, PSA, or 103-12 IE at end of year (see instructions)

Part II Information on Participating Plans (to be completed by DFEs)

(Complete as many entries as needed to report all participating plans)

a Plan name	
b Name of plan sponsor	**c** EIN-PN

a Plan name	
b Name of plan sponsor	**c** EIN-PN

a Plan name	
b Name of plan sponsor	**c** EIN-PN

a Plan name	
b Name of plan sponsor	**c** EIN-PN

a Plan name	
b Name of plan sponsor	**c** EIN-PN

a Plan name	
b Name of plan sponsor	**c** EIN-PN

a Plan name	
b Name of plan sponsor	**c** EIN-PN

a Plan name	
b Name of plan sponsor	**c** EIN-PN

a Plan name	
b Name of plan sponsor	**c** EIN-PN

a Plan name	
b Name of plan sponsor	**c** EIN-PN

a Plan name	
b Name of plan sponsor	**c** EIN-PN

a Plan name	
b Name of plan sponsor	**c** EIN-PN

SCHEDULE H (Form 5500)

Department of the Treasury
Internal Revenue Service

Department of Labor
Employee Benefits Security Administration

Pension Benefit Guaranty Corporation

Financial Information

This schedule is required to be filed under section 104 of the Employee Retirement Income Security Act of 1974 (ERISA), and section 6058(a) of the Internal Revenue Code (the Code).

▶ **File as an attachment to Form 5500.**

OMB No. 1210-0110

2018

This Form is Open to Public Inspection

For calendar plan year 2018 or fiscal plan year beginning 01/01/2018 and ending 12/31/2018

A Name of plan
RETIREMENT&SECURITY PROGRAM FOR EMPLOYEES OF NTCA AND ITS MEMBERS

B Three-digit plan number (PN) ▶ 333

C Plan sponsor's name as shown on line 2a of Form 5500
NATIONAL TELECOMMUNICATIONS COOPERATIVE ASSOCIATION

D Employer Identification Number (EIN)
52-0741336

Part I Asset and Liability Statement

1 Current value of plan assets and liabilities at the beginning and end of the plan year. Combine the value of plan assets held in more than one trust. Report the value of the plan's interest in a commingled fund containing the assets of more than one plan on a line-by-line basis unless the value is reportable on lines 1c(9) through 1c(14). Do not enter the value of that portion of an insurance contract which guarantees, during this plan year, to pay a specific dollar benefit at a future date. **Round off amounts to the nearest dollar.** MTIAs, CCTs, PSAs, and 103-12 IEs do not complete lines 1b(1), 1b(2), 1c(8), 1g, 1h, and 1i. CCTs, PSAs, and 103-12 IEs also do not complete lines 1d and 1e. See instructions.

Assets		(a) Beginning of Year	(b) End of Year
a Total noninterest-bearing cash	1a		
b Receivables (less allowance for doubtful accounts):			
(1) Employer contributions	1b(1)	110071382	108112883
(2) Participant contributions	1b(2)		
(3) Other	1b(3)	717499	113190
c General investments:			
(1) Interest-bearing cash (include money market accounts & certificates of deposit)	1c(1)	1351772	911565
(2) U.S. Government securities	1c(2)		
(3) Corporate debt instruments (other than employer securities):			
(A) Preferred	1c(3)(A)		
(B) All other	1c(3)(B)		
(4) Corporate stocks (other than employer securities):			
(A) Preferred	1c(4)(A)		
(B) Common	1c(4)(B)		
(5) Partnership/joint venture interests	1c(5)		
(6) Real estate (other than employer real property)	1c(6)		
(7) Loans (other than to participants)	1c(7)		
(8) Participant loans	1c(8)		
(9) Value of interest in common/collective trusts	1c(9)		
(10) Value of interest in pooled separate accounts	1c(10)		
(11) Value of interest in master trust investment accounts	1c(11)	2334325302	2128969118
(12) Value of interest in 103-12 investment entities	1c(12)		
(13) Value of interest in registered investment companies (e.g., mutual funds)	1c(13)		
(14) Value of funds held in insurance company general account (unallocated contracts)	1c(14)		
(15) Other	1c(15)		

			(a) Beginning of Year	(b) End of Year
1d	Employer-related investments:			
	(1) Employer securities	1d(1)		
	(2) Employer real property	1d(2)		
e	Buildings and other property used in plan operation	1e		
f	Total assets (add all amounts in lines 1a through 1e)	1f	2446465955	2238106756
	Liabilities			
g	Benefit claims payable	1g		
h	Operating payables	1h	1343230	1186167
i	Acquisition indebtedness	1i		
j	Other liabilities	1j		
k	Total liabilities (add all amounts in lines 1g through1j)	1k	1343230	1186167
	Net Assets			
l	Net assets (subtract line 1k from line 1f)	1l	2445122725	2236920589

Part II Income and Expense Statement

2 Plan income, expenses, and changes in net assets for the year. Include all income and expenses of the plan, including any trust(s) or separately maintained fund(s) and any payments/receipts to/from insurance carriers. Round off amounts to the nearest dollar. MTIAs, CCTs, PSAs, and 103-12 IEs do not complete lines 2a, 2b(1)(E), 2e, 2f, and 2g.

	Income		(a) Amount	(b) Total
a	**Contributions:**			
	(1) Received or receivable in cash from: **(A)** Employers	2a(1)(A)	143396771	
	(B) Participants	2a(1)(B)	19474822	
	(C) Others (including rollovers)	2a(1)(C)	1426120	
	(2) Noncash contributions	2a(2)		
	(3) Total contributions. Add lines **2a(1)(A), (B), (C),** and line **2a(2)**	2a(3)		164297713
b	**Earnings on investments:**			
	(1) Interest:			
	(A) Interest-bearing cash (including money market accounts and certificates of deposit)	2b(1)(A)	29381	
	(B) U.S. Government securities	2b(1)(B)		
	(C) Corporate debt instruments	2b(1)(C)		
	(D) Loans (other than to participants)	2b(1)(D)		
	(E) Participant loans	2b(1)(E)		
	(F) Other	2b(1)(F)		
	(G) Total interest. Add lines **2b(1)(A)** through **(F)**	2b(1)(G)		29381
	(2) Dividends: **(A)** Preferred stock	2b(2)(A)		
	(B) Common stock	2b(2)(B)		
	(C) Registered investment company shares (e.g. mutual funds)	2b(2)(C)		
	(D) Total dividends. Add lines **2b(2)(A)**, **(B)**, and **(C)**	2b(2)(D)		0
	(3) Rents	2b(3)		
	(4) Net gain (loss) on sale of assets: **(A)** Aggregate proceeds	2b(4)(A)		
	(B) Aggregate carrying amount (see instructions)	2b(4)(B)		
	(C) Subtract line **2b(4)(B)** from line **2b(4)(A)** and enter result	2b(4)(C)		0
	(5) Unrealized appreciation (depreciation) of assets: **(A)** Real estate	2b(5)(A)		
	(B) Other	2b(5)(B)		
	(C) Total unrealized appreciation of assets. Add lines **2b(5)(A)** and **(B)**	2b(5)(C)		0

		(a) Amount	(b) Total
(6) Net investment gain (loss) from common/collective trusts	2b(6)		
(7) Net investment gain (loss) from pooled separate accounts	2b(7)		
(8) Net investment gain (loss) from master trust investment accounts	2b(8)		-99990353
(9) Net investment gain (loss) from 103-12 investment entities	2b(9)		
(10) Net investment gain (loss) from registered investment companies (e.g., mutual funds)	2b(10)		
c Other income	2c		
d Total income. Add all **income** amounts in column (b) and enter total	2d		64336741
Expenses			
e Benefit payment and payments to provide benefits:			
(1) Directly to participants or beneficiaries, including direct rollovers	2e(1)	255561303	
(2) To insurance carriers for the provision of benefits	2e(2)		
(3) Other	2e(3)	1730639	
(4) Total benefit payments. Add lines **2e(1)** through **(3)**	2e(4)		257291942
f Corrective distributions (see instructions)	2f		
g Certain deemed distributions of participant loans (see instructions)	2g		
h Interest expense	2h		
i Administrative expenses: (1) Professional fees	2i(1)	1086545	
(2) Contract administrator fees	2i(2)	2942716	
(3) Investment advisory and management fees	2i(3)	137214	
(4) Other	2i(4)	11080460	
(5) Total administrative expenses. Add lines **2i(1)** through **(4)**	2i(5)		15246935
j Total expenses. Add all **expense** amounts in column (b) and enter total	2j		272538877
Net Income and Reconciliation			
k Net income (loss). Subtract line **2j** from line **2d**	2k		-208202136
l Transfers of assets:			
(1) To this plan	2l(1)		
(2) From this plan	2l(2)		

Part III Accountant's Opinion

3 Complete lines 3a through 3c if the opinion of an independent qualified public accountant is attached to this Form 5500. Complete line 3d if an opinion is not attached.

a The attached opinion of an independent qualified public accountant for this plan is (see instructions):

(1) [X] Unqualified **(2)** [ ] Qualified **(3)** [ ] Disclaimer **(4)** [ ] Adverse

b Did the accountant perform a limited scope audit pursuant to 29 CFR 2520.103-8 and/or 103-12(d)? [ ] Yes [X] No

c Enter the name and EIN of the accountant (or accounting firm) below:

(1) Name: CLIFTONLARSONALLEN, LLP **(2)** EIN: 41-0746749

d The opinion of an independent qualified public accountant is **not attached** because:

(1) [ ] This form is filed for a CCT, PSA, or MTIA. **(2)** [ ] It will be attached to the next Form 5500 pursuant to 29 CFR 2520.104-50.

Part IV Compliance Questions

4 CCTs and PSAs do not complete Part IV. MTIAs, 103-12 IEs, and GIAs do not complete lines 4a, 4e, 4f, 4g, 4h, 4k, 4m, 4n, or 5. 103-12 IEs also do not complete lines 4j and 4l. MTIAs also do not complete line 4l.

During the plan year:

		Yes	No	Amount
a Was there a failure to transmit to the plan any participant contributions within the time period described in 29 CFR 2510.3-102? Continue to answer "Yes" for any prior year failures until fully corrected. (See instructions and DOL's Voluntary Fiduciary Correction Program.)	4a		X	
b Were any loans by the plan or fixed income obligations due the plan in default as of the close of the plan year or classified during the year as uncollectible? Disregard participant loans secured by participant's account balance. (Attach Schedule G (Form 5500) Part I if "Yes" is checked.)	4b		X	

			Yes	No	Amount
c	Were any leases to which the plan was a party in default or classified during the year as uncollectible? (Attach Schedule G (Form 5500) Part II if "Yes" is checked.)	4c		X	
d	Were there any nonexempt transactions with any party-in-interest? (Do not include transactions reported on line 4a. Attach Schedule G (Form 5500) Part III if "Yes" is checked.)	4d		X	
e	Was this plan covered by a fidelity bond?	4e	X		1400000
f	Did the plan have a loss, whether or not reimbursed by the plan's fidelity bond, that was caused by fraud or dishonesty?	4f		X	
g	Did the plan hold any assets whose current value was neither readily determinable on an established market nor set by an independent third party appraiser?	4g	X		352455758
h	Did the plan receive any noncash contributions whose value was neither readily determinable on an established market nor set by an independent third party appraiser?	4h		X	
i	Did the plan have assets held for investment? (Attach schedule(s) of assets if "Yes" is checked, and see instructions for format requirements.)	4i	X		
j	Were any plan transactions or series of transactions in excess of 5% of the current value of plan assets? (Attach schedule of transactions if "Yes" is checked, and see instructions for format requirements.)	4j		X	
k	Were all the plan assets either distributed to participants or beneficiaries, transferred to another plan, or brought under the control of the PBGC?	4k		X	
l	Has the plan failed to provide any benefit when due under the plan?	4l		X	
m	If this is an individual account plan, was there a blackout period? (See instructions and 29 CFR 2520.101-3.)	4m			
n	If 4m was answered "Yes," check the "Yes" box if you either provided the required notice or one of the exceptions to providing the notice applied under 29 CFR 2520.101-3.	4n			

5a Has a resolution to terminate the plan been adopted during the plan year or any prior plan year? ☐ Yes ☒ No
If "Yes," enter the amount of any plan assets that reverted to the employer this year _____.

5b If, during this plan year, any assets or liabilities were transferred from this plan to another plan(s), identify the plan(s) to which assets or liabilities were transferred. (See instructions.)

5b(1) Name of plan(s)	**5b(2)** EIN(s)	**5b(3)** PN(s)

5c If the plan is a defined benefit plan, is it covered under the PBGC insurance program (See ERISA section 4021.)? ..... ☒ Yes ☐ No ☐ Not determined
If "Yes" is checked, enter the My PAA confirmation number from the PBGC premium filing for this plan year 4158007. (See instructions.)

SCHEDULE R (Form 5500)

Department of the Treasury
Internal Revenue Service

Department of Labor
Employee Benefits Security Administration

Pension Benefit Guaranty Corporation

Retirement Plan Information

This schedule is required to be filed under sections 104 and 4065 of the Employee Retirement Income Security Act of 1974 (ERISA) and section 6058(a) of the Internal Revenue Code (the Code).

▶ **File as an attachment to Form 5500.**

OMB No. 1210-0110

2018

This Form is Open to Public Inspection.

For calendar plan year 2018 or fiscal plan year beginning 01/01/2018 and ending 12/31/2018

A Name of plan
RETIREMENT&SECURITY PROGRAM FOR EMPLOYEES OF NTCA AND ITS MEMBERS

B Three-digit plan number (PN) ▶ 333

C Plan sponsor's name as shown on line 2a of Form 5500
NATIONAL TELECOMMUNICATIONS COOPERATIVE ASSOCIATION

D Employer Identification Number (EIN)
52-0741336

Part I Distributions

All references to distributions relate only to payments of benefits during the plan year.

1 Total value of distributions paid in property other than in cash or the forms of property specified in the instructions **1** 0

2 Enter the EIN(s) of payor(s) who paid benefits on behalf of the plan to participants or beneficiaries during the year (if more than two, enter EINs of the two payors who paid the greatest dollar amounts of benefits):

EIN(s): 04-6568107

Profit-sharing plans, ESOPs, and stock bonus plans, skip line 3.

3 Number of participants (living or deceased) whose benefits were distributed in a single sum, during the plan year **3** 693

Part II Funding Information (If the plan is not subject to the minimum funding requirements of section 412 of the Internal Revenue Code or ERISA section 302, skip this Part.)

4 Is the plan administrator making an election under Code section 412(d)(2) or ERISA section 302(d)(2)? ..... ☐ **Yes** ☒ **No** ☐ **N/A**

If the plan is a defined benefit plan, go to line 8.

5 If a waiver of the minimum funding standard for a prior year is being amortized in this plan year, see instructions and enter the date of the ruling letter granting the waiver. **Date:** Month _____ Day _____ Year _____

If you completed line 5, complete lines 3, 9, and 10 of Schedule MB and do not complete the remainder of this schedule.

6 **a** Enter the minimum required contribution for this plan year (include any prior year accumulated funding deficiency not waived) **6a**

b Enter the amount contributed by the employer to the plan for this plan year **6b**

c Subtract the amount in line 6b from the amount in line 6a. Enter the result (enter a minus sign to the left of a negative amount) **6c**

If you completed line 6c, skip lines 8 and 9.

7 Will the minimum funding amount reported on line 6c be met by the funding deadline? ..... ☐ **Yes** ☐ **No** ☐ **N/A**

8 If a change in actuarial cost method was made for this plan year pursuant to a revenue procedure or other authority providing automatic approval for the change or a class ruling letter, does the plan sponsor or plan administrator agree with the change? ..... ☐ **Yes** ☐ **No** ☒ **N/A**

Part III Amendments

9 If this is a defined benefit pension plan, were any amendments adopted during this plan year that increased or decreased the value of benefits? If yes, check the appropriate box. If no, check the "No" box. ..... ☐ **Increase** ☐ **Decrease** ☐ **Both** ☒ **No**

Part IV ESOPs (see instructions). If this is not a plan described under section 409(a) or 4975(e)(7) of the Internal Revenue Code, skip this Part.

10 Were unallocated employer securities or proceeds from the sale of unallocated securities used to repay any exempt loan? ..... ☐ **Yes** ☐ **No**

11 **a** Does the ESOP hold any preferred stock? ..... ☐ **Yes** ☐ **No**

b If the ESOP has an outstanding exempt loan with the employer as lender, is such loan part of a "back-to-back" loan? (See instructions for definition of "back-to-back" loan.) ..... ☐ **Yes** ☐ **No**

12 Does the ESOP hold any stock that is not readily tradable on an established securities market? ..... ☐ **Yes** ☐ **No**

Part V Additional Information for Multiemployer Defined Benefit Pension Plans

13 Enter the following information for each employer that contributed more than 5% of total contributions to the plan during the plan year (measured in dollars). See instructions. *Complete as many entries as needed to report all applicable employers.*

a Name of contributing employer

b EIN **c** Dollar amount contributed by employer

d Date collective bargaining agreement expires *(If employer contributes under more than one collective bargaining agreement, check box* ☐ *and see instructions regarding required attachment. Otherwise, enter the applicable date.)* Month _____ Day _____ Year _____

e Contribution rate information *(If more than one rate applies, check this box* ☐ *and see instructions regarding required attachment. Otherwise, complete lines 13e(1) and 13e(2).)*
(1) Contribution rate (in dollars and cents) _____
(2) Base unit measure: ☐ Hourly ☐ Weekly ☐ Unit of production ☐ Other (specify):

---

a Name of contributing employer

b EIN **c** Dollar amount contributed by employer

d Date collective bargaining agreement expires *(If employer contributes under more than one collective bargaining agreement, check box* ☐ *and see instructions regarding required attachment. Otherwise, enter the applicable date.)* Month _____ Day _____ Year _____

e Contribution rate information *(If more than one rate applies, check this box* ☐ *and see instructions regarding required attachment. Otherwise, complete lines 13e(1) and 13e(2).)*
(1) Contribution rate (in dollars and cents) _____
(2) Base unit measure: ☐ Hourly ☐ Weekly ☐ Unit of production ☐ Other (specify): _____

---

a Name of contributing employer

b EIN **c** Dollar amount contributed by employer

d Date collective bargaining agreement expires *(If employer contributes under more than one collective bargaining agreement, check box* ☐ *and see instructions regarding required attachment. Otherwise, enter the applicable date.)* Month _____ Day _____ Year _____

e Contribution rate information *(If more than one rate applies, check this box* ☐ *and see instructions regarding required attachment. Otherwise, complete lines 13e(1) and 13e(2).)*
(1) Contribution rate (in dollars and cents) _____
(2) Base unit measure: ☐ Hourly ☐ Weekly ☐ Unit of production ☐ Other (specify): _____

---

a Name of contributing employer

b EIN **c** Dollar amount contributed by employer

d Date collective bargaining agreement expires *(If employer contributes under more than one collective bargaining agreement, check box* ☐ *and see instructions regarding required attachment. Otherwise, enter the applicable date.)* Month _____ Day _____ Year _____

e Contribution rate information *(If more than one rate applies, check this box* ☐ *and see instructions regarding required attachment. Otherwise, complete lines 13e(1) and 13e(2).)*
(1) Contribution rate (in dollars and cents) _____
(2) Base unit measure: ☐ Hourly ☐ Weekly ☐ Unit of production ☐ Other (specify): _____

---

a Name of contributing employer

b EIN **c** Dollar amount contributed by employer

d Date collective bargaining agreement expires *(If employer contributes under more than one collective bargaining agreement, check box* ☐ *and see instructions regarding required attachment. Otherwise, enter the applicable date.)* Month _____ Day _____ Year _____

e Contribution rate information *(If more than one rate applies, check this box* ☐ *and see instructions regarding required attachment. Otherwise, complete lines 13e(1) and 13e(2).)*
(1) Contribution rate (in dollars and cents) _____
(2) Base unit measure: ☐ Hourly ☐ Weekly ☐ Unit of production ☐ Other (specify): _____

---

a Name of contributing employer

b EIN **c** Dollar amount contributed by employer

d Date collective bargaining agreement expires *(If employer contributes under more than one collective bargaining agreement, check box* ☐ *and see instructions regarding required attachment. Otherwise, enter the applicable date.)* Month _____ Day _____ Year _____

e Contribution rate information *(If more than one rate applies, check this box* ☐ *and see instructions regarding required attachment. Otherwise, complete lines 13e(1) and 13e(2).)*
(1) Contribution rate (in dollars and cents) _____
(2) Base unit measure: ☐ Hourly ☐ Weekly ☐ Unit of production ☐ Other (specify): _____

14 Enter the number of participants on whose behalf no contributions were made by an employer as an employer of the participant for:

a The current year	**14a**	
b The plan year immediately preceding the current plan year	**14b**	
c The second preceding plan year	**14c**	

15 Enter the ratio of the number of participants under the plan on whose behalf no employer had an obligation to make an employer contribution during the current plan year to:

a The corresponding number for the plan year immediately preceding the current plan year	**15a**	
b The corresponding number for the second preceding plan year	**15b**	

16 Information with respect to any employers who withdrew from the plan during the preceding plan year:

a Enter the number of employers who withdrew during the preceding plan year	**16a**	
b If line 16a is greater than 0, enter the aggregate amount of withdrawal liability assessed or estimated to be assessed against such withdrawn employers	**16b**	

17 If assets and liabilities from another plan have been transferred to or merged with this plan during the plan year, check box and see instructions regarding supplemental information to be included as an attachment. ☐

Part VI Additional Information for Single-Employer and Multiemployer Defined Benefit Pension Plans

18 If any liabilities to participants or their beneficiaries under the plan as of the end of the plan year consist (in whole or in part) of liabilities to such participants and beneficiaries under two or more pension plans as of immediately before such plan year, check box and see instructions regarding supplemental information to be included as an attachment ☐

19 If the total number of participants is 1,000 or more, complete lines (a) through (c)

a Enter the percentage of plan assets held as:
Stock: 44 % Investment-Grade Debt: 19 % High-Yield Debt: 11 % Real Estate: 9 % Other: 17 %

b Provide the average duration of the combined investment-grade and high-yield debt:
☐ 0-3 years ☐ 3-6 years ☐ 6-9 years ☒ 9-12 years ☐ 12-15 years ☐ 15-18 years ☐ 18-21 years ☐ 21 years or more

c What duration measure was used to calculate line 19(b)?
☒ Effective duration ☐ Macaulay duration ☐ Modified duration ☐ Other (specify):

RETIREMENT & SECURITY PROGRAM OF NTCA AND ITS MEMBERS

FINANCIAL STATEMENTS

YEARS ENDED DECEMBER 31, 2018 AND 2017

RETIREMENT & SECURITY PROGRAM OF NTCA AND ITS MEMBERS
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*Certain Schedules are included with Form 5500 of the Master Trust (Annual Return/Report of Employee Benefit Plan) filed with the Department of Labor for the period ended December 31, 2018, and are not required to be disclosed for this Plan.

CliftonLarsonAllen LLP
CLAconnect.com

INDEPENDENT AUDITORS' REPORT

Trust Committee and Plan Participants
Retirement & Security Program of
NTCA and its Members
Arlington, Virginia

Report on the Financial Statements

We have audited the accompanying financial statements of the Retirement & Security Program of NTCA and its Members (the Program), which comprise the statements of net assets available for benefits as of December 31, 2018 and 2017, and the related statements of changes in net assets available for benefits for the years then ended, and the related notes to the financial statements.

Management's Responsibility for the Financial Statements

Management is responsible for the preparation and fair presentation of these financial statements in accordance with accounting principles generally accepted in the United States of America; this includes the design, implementation, and maintenance of internal control relevant to the preparation and fair presentation of financial statements that are free from material misstatement, whether due to fraud or error.

Auditors' Responsibility

Our responsibility is to express an opinion on these financial statements based on our audits. We conducted our audits in accordance with auditing standards generally accepted in the United States of America. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditors' judgment, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the Program's preparation and fair presentation of the financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Program's internal control. Accordingly, we express no such opinion. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluating the overall presentation of the financial statements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

Trust Committee and Plan Participants
Retirement & Security Program of
NTCA and its Members

Opinion

In our opinion, the net assets available for benefits as of December 31, 2018 and changes therein for the year then ended and its financial status as of December 31, 2017 and changes therein for the year then ended in accordance with accounting principles generally accepted in the United States of America.

CliftonLarsonAllen LLP

Arlington, Virginia
July 17, 2019

RETIREMENT & SECURITY PROGRAM OF NTCA AND ITS MEMBERS
STATEMENTS OF NET ASSETS AVAILABLE FOR BENEFITS
DECEMBER 31, 2018 AND 2017

	2018	2017
ASSETS		
INVESTMENTS (AT FAIR VALUE)		
Interest in Master Trust	$ 1,925,549,430	$ 2,121,071,238
Net Assets Held in 401(h) Account	203,419,688	213,254,064
Total Investments (at Fair Value)	2,128,969,118	2,334,325,302
RECEIVABLES		
Contributions	108,112,883	110,071,382
Early Retirement Incentive	59,714	347,467
Prior-Service Benefits	-	314,888
Total Receivables	108,172,597	110,733,737
CASH AND CASH EQUIVALENTS	911,565	1,351,772
PREPAID EXPENSES	53,476	55,144
Total Assets	2,238,106,756	2,446,465,955
LIABILITIES		
ACCOUNTS PAYABLE		
Custodial Trustee and Investment Managers' Fees	1,138,923	1,300,878
DUE TO NTCA AND AFFILIATES	47,244	42,352
AMOUNTS RELATED TO OBLIGATION OF 401(h) ACCOUNT	203,419,688	213,254,064
Total Liabilities	204,605,855	214,597,294
NET ASSETS AVAILABLE FOR BENEFITS	$ 2,033,500,901	$ 2,231,868,661

See accompanying Notes to Financial Statements.

RETIREMENT & SECURITY PROGRAM OF NTCA AND ITS MEMBERS
STATEMENTS OF CHANGES IN NET ASSETS AVAILABLE FOR BENEFITS
YEARS ENDED DECEMBER 31, 2018 AND 2017

	2018	2017
ADDITIONS:		
INVESTMENT INCOME (LOSS)		
Master Trust Investment Income (Loss)	$ (90,524,023)	$ 303,022,034
Interest	29,381	71,634
Total Investment Income (Loss)	(90,494,642)	303,093,668
CONTRIBUTIONS		
Participant Contributions	19,474,822	17,659,689
Contributions from NTCA and Other Participating Employers	141,832,971	113,811,795
Assets Transferred from Other Plans	1,425,631	679,036
Total Contributions	162,733,424	132,150,520
Other Income	489	73
Total Additions	72,239,271	435,244,261
DEDUCTIONS:		
BENEFIT PAYMENTS		
Benefit Payments to Participants	254,576,305	201,484,588
Death Benefit Payments	984,998	753,515
Total Benefit Payments	255,561,303	202,238,103
ADMINISTRATIVE EXPENSES		
Administrative and Management Fees to SMC	2,867,578	2,854,033
Other Administrative Expenses	12,178,150	11,199,008
Total Administrative Expenses	15,045,728	14,053,041
Total Deductions	270,607,031	216,291,144
NET INCREASE (DECREASE)	(198,367,760)	218,953,117
NET ASSETS AVAILABLE FOR BENEFITS:		
Beginning of Year	2,231,868,661	2,012,915,544
End of Year	$ 2,033,500,901	$ 2,231,868,661

See accompanying Notes to Financial Statements.

NOTE 1 DESCRIPTION OF THE PROGRAM

The following description of the Retirement & Security Program of NTCA and its Members (the Program) provides only general information. Participants should refer to the Program's summary plan description and specifications for a more complete description of the Program's provisions. Copies of these documents are available from the National Telecommunications Cooperative Association (NTCA) or from a participating employer. The Program was most recently restated effective January 1, 2018.

General

The Program is a multiple employer defined benefit pension plan covering many of the full-time employees of NTCA, its affiliates, and its members that have adopted the Program (collectively, the Participating Employers or Employers). The Program is subject to the provisions of the Employee Retirement Income Security Act of 1974 (ERISA), as amended.

Contributions

Employers who adopt the Program make contributions monthly to the Program for all eligible employees. These contributions are calculated as a percentage of each participant's compensation with the percentage for each Employer specified in the Employer's adoption agreement. Certain Employers require participants to make contributions to the Program to receive the Employers' contribution. Such mandatory participant contributions are specified in the adoption agreement as a percent of salary, with a cap of 6%. Effective January 1, 2018, there is no cap of 6% on the amount of required employee contributions. Voluntary contributions by participants are not permitted.

In addition, each Employer contributes a surcharge contribution. Generally, the surcharge contribution for each such Program year is the sum of (i) the product of the Employer's surcharge contribution percentage times the compensation of the Employer's participants for the Program Year, plus (ii) the amount of any surcharge contributions for the Program year by the Employer on behalf of disabled participants.

The Surcharge Contribution Percentage after Plan Year 2017 for an 8/24/2015 Participating Member is the product of (i) 50% times (ii) the sum of the following percentages elected under or pursuant to the Participating Member's Adoption Agreement: Section C, Rule-of-85, and Section G, Participating Member Contributions and Participant Contributions for active Employees, in effect on August 24, 2015. The Surcharge Contribution Percentage for Plan Years after 2017 for a Participating Member that is not an 8/24/2015 Participating Member is the highest Surcharge Contribution Percentage of any 8/24/2015 Participating Member in the same Controlled Group as such Participating Member.

The Surcharge Contribution Percentage for the 2017 Plan Year for a 5/19/2015 Participating Member is the product of (i) 25% times (ii) the sum of the following percentages elected under or pursuant to the 5/19/15 Participating Member's Adoption Agreement: Section C, Rule-of-85, and Section G, Member Contributions and Participant Contributions for active Employees, in effect on May 19, 2015. The Surcharge Contribution Percentage for the 2017 Plan Year for a Participating Member that is not a 5/19/2015 Participating Member is the highest Surcharge Contribution Percentage of any 5/19/2015 Participating Member in the same Controlled Group as such Participating Member.

NOTE 1 DESCRIPTION OF THE PROGRAM (CONTINUED)

Participating Employers may not require employees to make contributions at a rate in excess of 100% of the rate of Employer contributions. This limitation only applies to changes to Employer or employee rates after the effective date and will not need to be retroactively applied to adoption agreements already in effect at that date.

Employers also may elect to fund prior service benefits for participants on a non-discriminatory basis. The Employer may fund these benefits either by a lump sum payment or by installment payments, with interest charged at an actuarially determined rate on the unpaid balance.

Participants may roll over qualified lump sum distributions into the Program when restoring a previously distributed benefit or at retirement to increase the monthly pension amount.

The Program meets the ERISA minimum funding requirements.

401(h) Accounts

The Program provides a post-retirement medical benefit component in addition to the normal retirement benefits of the Program, pursuant to Section 401(h) of the Internal Revenue Code (IRC). These benefits are Employer funded, subject to certain restrictions and limitations, and can be disbursed only to reimburse participating Employers for payment of certain non-pension retiree health benefits, as outlined in the Program's provisions. If an Employer were to withdraw from the Program, or if the Program were to be terminated, all 401(h) amounts on deposit in the trust would revert to the Employer that established and funded the account. Distributions to the Program's participants are not permitted. Because the 401(h) net assets may not be used to satisfy Plan obligations, the total net assets available for benefits does not include net assets held in the 401(h) account. The Plan's statements of changes in net assets available for benefits do not include any of the components of the changes in the 401(h) net assets.

Pension, Death, and Disability Benefits

If an employee dies prior to retirement while covered under the Program, the participant's beneficiary is entitled to a pre-retirement death benefit. For participants who die prior to age 65, the basic death benefit is generally 100 times the monthly pension that would have been payable had the participant survived until age 65 and retired. After age 65, the basic death benefit equals the present value of the participant's accrued retirement benefit as of the date of death.

The Program permits payments of a lump sum benefit if elected by nonspousal beneficiaries of nonretired participants who die on or after age 55.

NOTE 1 DESCRIPTION OF THE PROGRAM (CONTINUED)

Pension, Death, and Disability Benefits (Continued)

Participants who retire at age 65 (the Program's normal retirement age), age 55 (the Program's early retirement age) or at an age between those two are entitled to a monthly annuity or a lump sum payment. There is no minimum service requirement to qualify for this benefit; however, the benefit payable generally is reduced actuarially if the participant retires before normal retirement age. However, companies may pay an additional amount to provide employees an unreduced benefit as early as age 55. In addition, if a participant's age is at least 55 and age and service years added together equal at least 85 at retirement, the participant can receive an unreduced benefit when retiring before age 65. This benefit provision is called the "Rule-of-85."

The normal benefit payable is calculated using the participant's highest five compensation years from the last 10 years of credited service, multiplied by the sum of accumulated company and participant net contribution percentages made prior to January 1, 2008, and the actuarial factor of 0.2168 plus the sum of accumulated company and participant net contribution percentages made between January 1, 2008 and December 31, 2013, and the actuarial factor of 0.2091 plus the sum of accumulated company and participant net contribution percentages made between January 1, 2014 and December 31, 2016, and the actuarial factor of 0.1855 plus the sum of accumulated company and participant net contribution percentages made after December 31, 2016, and the actuarial factor of 0.1531. If the retiring employee is under age 65, the benefit then is actuarially reduced, unless the participant qualifies under the Rule-of-85 outlined above. In certain limited circumstances, a participant's accrued benefit may be calculated differently in order to conform to Program and legal requirements.

For married participants who retire, the normal form of benefit is a 50% joint and survivor benefit. For other participants, the normal form of benefit is a life annuity with payment guaranteed for 10 years. Optional forms of benefits (including a 75% joint and survivor benefit, a 100% joint and survivor benefit, a lump sum payment, etc.) are also available to retiring participants. Married retirees, however, must obtain spousal consent for any benefit election that does not provide a monthly survivor benefit of at least 50%. The Program permits certain eligible participants, without regard to their age, to roll over a lump sum distribution of benefits to the NTCA Savings Plan. The number of days required for participants to receive notice of a reduction in accrued benefits is 45 days.

Participants who receive a Program distribution and subsequently return to work for a participating member company are permitted to restore their previous accrued benefit with contributions, including from an eligible rollover distribution, within five years of their re-employment date.

The Program automatically cash-outs account balances of $1,000 or less and rolls into an IRA any terminated employees account balance that is between $1,000 and $5,000.

The Program requires distribution of benefits to terminated participants at the Program's normal retirement age (65).

NOTE 1 DESCRIPTION OF THE PROGRAM (CONTINUED)

Pension, Death, and Disability Benefits (Continued)

The Program provides for the purchase of a group annuity contract to assume the Program's liability for benefits payable to participants, beneficiaries, and retirees of employers that withdraw from the Program after April 30, 2013, and do not elect to spin out to a successor defined benefit plan.

The Program provides for the purchase of a group annuity contract to assume the Program's liability for benefits payable to participants, beneficiaries, and retirees of employers who were not active participating members as of December 31, 2012.

Effective January 1, 2014, the Program added 10-year certain, Social Security leveling, and combination lump sum and annuity features to the 75% joint and survivor benefit.

The Program does not provide pension benefits on the basis of participant disability.

Participants are fully vested immediately in their accrued benefits.

NOTE 2 SUMMARY OF ACCOUNTING POLICIES

Basis of Accounting

The financial statements are prepared on the accrual basis of accounting.

Fair Value Measurements

The Program categorizes its assets and liabilities measured at fair value into a three-level hierarchy based on the priority of the inputs to the valuation technique used to determine fair value. That framework provides a fair value hierarchy that prioritizes the inputs to valuation techniques used to measure fair value. The hierarchy gives the highest priority to unadjusted quoted prices in active markets for identical assets or liabilities (Level 1 measurements) and the lowest priority to unobservable inputs (Level 3 measurements).

The three levels of the fair value hierarchy are described as follows:

Level 1 – Inputs to the valuation methodology are unadjusted quoted prices for identical assets or liabilities in active markets that the Program has the ability to access.

Level 2 – Inputs other than quoted prices included within Level 1 that are observable for the asset or liability, either directly or indirectly, such as:

- quoted prices for similar assets or liabilities in active markets;
- quoted prices for identical or similar assets or liabilities in inactive markets;
- inputs other than quoted prices that are observable for the asset or liability;
- inputs that are derived principally from or corroborated by observable market data by correlation or other means.

NOTE 2 SUMMARY OF ACCOUNTING POLICIES (CONTINUED)

Fair Value Measurements (Continued)

If the asset or liability has a specified (contractual) term, the Level 2 input must be observable for substantially the full term of the asset or liability.

Level 3 – Inputs to the valuation methodology are unobservable and significant to the fair market value measurement.

The asset or liability's fair value measurement level within the fair value hierarchy is based on the lowest level of any input that is significant to the fair value measurement. Valuation techniques used need to maximize the use of observable inputs and minimize the use of unobservable inputs. There have been no changes in the valuation methodologies used at December 31, 2018 and 2017.

Investment Valuation and Income Recognition

Investments are recorded at fair value. Fair value is the price that would be received to sell an asset or paid to transfer a liability in orderly transaction between market participants at the measurement date. The Program's Trust Committee determines the valuation policies utilizing information provided by the investment advisor and trustee. See Note 5 for a discussion of fair value of investments.

Interest income is recorded on the accrual basis. The fair value of the Plan's interest in the master trust is based on the beginning of year value of the Plan's interest in the trust plus actual contributions and allocated investment income less actual distributions and allocated administrative expenses.

Cash and Cash Equivalents

Cash equivalents include overnight repurchase agreements that are collateralized by a bank at an amount equal to at least 100% of the resale price. The collateral consists of U.S. Treasury or agency securities and is required to be held in a segregated custody account. In the event of default, the Program has the right to liquidate the collateral and apply the proceeds in satisfaction of the obligation.

A portion of these funds, $365,014 and $101,749, represents the Program's interest as of December 31, 2018 and 2017, respectively, in a lockbox bank account held jointly with NTCA and used for initial deposits of plan-related employer payments.

Actuarial Present Value of Accumulated Benefits

Accumulated Program benefits are those estimated future periodic payments, including lump sum distributions that are attributable under the Program's provisions to services rendered by the participants to the valuation date. Accumulated benefits include benefits expected to be paid to retired or terminated employees of NTCA and participating member systems or their beneficiaries, and to present employees or their beneficiaries.

NOTE 2 SUMMARY OF ACCOUNTING POLICIES (CONTINUED)

Actuarial Present Value of Accumulated Benefits (Continued)

Benefits under the Program are based on a participant's highest five compensation years from the last 10 years of credited service. The accumulated benefits for active participants are based upon estimated average compensation during the years preceding the valuation date. Benefits payable under all circumstances (e.g., retirement, termination of employment and death) are included to the extent they are deemed attributable to employee service rendered to the valuation date. Present employees' accumulated contributions, including interest, as of December 31, 2017 were $155,345,640. Interest was credited on employees' contributions at a rate of 2.62% for the year ended December 31, 2017.

Benefits to be provided through annuity contracts are excluded from plan assets and are also excluded from accumulated plan benefits.

Contributions

The Program records contributions in the period they are due. Contributions received through September 15 are allocated to the prior year in order to minimize the Program's unfunded vested benefits as defined by the Pension Benefit Guaranty Corporation (PBGC). At December 31, 2018 and 2017, contributions receivable and contributions revenue include amounts estimated to be received by the Program through September 15, 2019 and 2018, respectively.

Benefit Payments

Benefits are recorded in the period of distribution.

Use of Estimates

The accompanying financial statements are prepared in accordance with U.S. generally accepted accounting principles (GAAP). The preparation of financial statements in accordance with GAAP requires management to make estimates and assumptions that affect the amounts reported in the financial statements and accompanying notes. Actual results could differ from those estimates.

Administrative Expenses

The Plan's expenses are paid by the Program. Certain expenses incurred in connection with the general administration of the Program that are paid by the Program are recorded as administrative expenses in the accompanying Statements of Changes in Net Assets Available for Benefits. In addition, certain investment related expenses are included in master trust investment income presented in the accompanying Statement of Changes in Net Assets Available for Benefits.

Subsequent Events

In preparing these financial statements, the Program has evaluated events and transactions for potential recognition or disclosure through July 17, 2019, the date the financial statements were available to be issued.

Effective January 1, 2019, the Program will allow a member company to freeze R&S Program participation to new employees.

NOTE 3 CONCENTRATION OF CREDIT RISK

The Federal Deposit Insurance Corporation (FDIC) insures bank balances up to $250,000 per depositor, per insured bank. Management monitors these balances and believes they do not represent significant credit risk to the Program.

NOTE 4 INVESTMENTS

The investments of the Program are held in the R&S Program and Savings Plan of NTCA and its Members Employee Benefit Trust (Master Trust) which was established for the investment of assets of the Program and 401(h) investments. The Program and 401(h) accounts each have an undivided interest in the Master Trust. The assets of the Master Trust are held by State Street Bank and Trust Company pursuant to the provisions of the Employee Benefit Plan Trust Agreement. At December 31, 2018 and 2017, the Program and 401(h) account's interest in the net assets of the Master Trust was approximately 96.0% and 96.2%, respectively. Investment income and administrative expenses relating to the Master Trust are allocated to the individual plans based upon their proportionate interest in the Master Trust fund. The value of the Program's interest in the Master Trust is based on the beginning of year value of the Program's interest in the trust plus actual contributions and allocated investment income less actual distributions and allocated administrative expenses.

The following table presents the net assets of the Master Trust at December 31:

	2018	2017
Investments at Fair Value:		
Short-Term Investments	$ 44,387,574	$ 51,635,147
Corporate Bonds	107,617,225	107,153,080
Common Stocks	294,898,267	383,517,172
Mutual Funds	53,582,582	67,685,964
Collective Trust Funds	1,302,292,639	1,517,065,308
Group Variable Annuity Policy	49,828,494	-
Real Estate Investment Trust	11,740,812	10,997,767
Private Equity Investments	352,455,758	285,864,969
Unrealized Appreciation (Depreciation) on Foreign Exchange Receivables	(519,959)	734,314
Unrealized Depreciation on Foreign Exchange Payables	(192,397)	(870,145)
	2,216,090,995	2,423,783,576
Receivables (Payables):		
Due from Brokers for Securities Sold	91,265,405	115,166,938
Due to Brokers for Securities Purchased	(92,177,744)	(113,769,146)
Tax Reclamation	546,938	440,233
Accrued Investment Income	2,347,571	2,115,245
Total Receivables (Payables)	1,982,170	3,953,270
Net Assets of Master Trust	$ 2,218,073,165	$ 2,427,736,846

NOTE 4 INVESTMENTS (CONTINUED)

Investment income for the Master Trust is as follows for the years ended December 31:

	2018	2017
Net Appreciation (Depreciation) in Fair Value of Investments:	$ (136,017,458)	$ 320,206,596
Interest	7,714,247	6,645,265
Dividends	13,856,642	11,097,633
Other income	13,915,085	12,340,176
Investment Expenses	(3,584,058)	(3,993,722)
Total Master Trust Investment Income (Loss)	$ (104,115,542)	$ 346,295,948

NOTE 5 FAIR VALUE MEASUREMENT

Following is a description of the valuation methodologies used for assets held in the Master Trust, which are measured at fair value. Investments in short-term investments are stated at cost, which approximates fair value. Investments in corporate bonds are valued on yields currently available on comparable securities of issuers with similar credit ratings. Investments in common stocks are valued at the closing price reported in the actual market in which the individual security is traded. Mutual funds held by the Plan are open-end mutual funds that are registered with the Securities and Exchange Commission. These funds are required to publish their daily net asset value (NAV) and to transact at that price. Investments in foreign securities are reported at their foreign currency denominated fair value and are converted into U.S. dollars using current exchange rates.

Investments in collective trust funds and real estate investment trusts are valued based on NAV of units, which are based on observable prices of the underlying assets, held by the funds at year-end and are included as investments measured at NAV. For certain funds NAV is a readily determinable fair value and is the basis for current transactions and participant transactions (purchases and sales) may occur daily. These funds are included in Level 2.

Investment in the group variable annuity policy is valued based on the value of the underlying investments estimated NAV, as provided by the investment managers and is included as investment measured at NAV.

Investments in private equity investments, which are not readily marketable, are carried at their estimated NAV as provided by the investment managers and are included as investments measured at NAV. The Program reviews and evaluates the values provided by the investment manager and agrees with the valuation methods and assumptions used in determining the fair value of the alternative investments. Those estimated fair values may differ significantly from the values that would have been used had a ready market for these investments existed.

NOTE 5 FAIR VALUE MEASUREMENT (CONTINUED)

The following tables set forth by level, within the fair value hierarchy, the Master Trust's assets at fair value as of December 31:

	2018			
	Level 1	Level 2	Level 3	Total
Short-Term Investments	$ 44,387,574	$ -	$ -	$ 44,387,574
Corporate Bonds	-	107,617,225	-	107,617,225
Common Stocks	294,898,267	-	-	294,898,267
Mutual Funds	53,582,582	-	-	53,582,582
Collective Trust Funds	-	1,186,690,955	-	1,186,690,955
Real Estate Investment Trusts	-	10,343,185	-	10,343,185
Unrealized Depreciation on Foreign Exchange Receivables	(519,959)	-	-	(519,959)
Unrealized Depreciation on Foreign Exchange Payables	(192,397)	-	-	(192,397)
Total Investments in the Fair Value Hierarchy	$ 392,156,067	$ 1,304,651,365	$ -	1,696,807,432
Investments Measured at NAV				519,283,563
Total Investments at Fair Value				$ 2,216,090,995

	2017			
	Level 1	Level 2	Level 3	Total
Short-Term Investments	$ 51,635,147	$ -	$ -	$ 51,635,147
Corporate Bonds	-	107,153,080	-	107,153,080
Common Stocks	383,517,172	-	-	383,517,172
Mutual Funds	67,685,964	-	-	67,685,964
Collective Trust Funds	-	1,332,866,714	-	1,332,866,714
Real Estate Investment Trusts	-	9,281,475	-	9,281,475
Unrealized Appreciation on Foreign Exchange Receivables	734,314	-	-	734,314
Unrealized Depreciation on Foreign Exchange Payables	(870,145)	-	-	(870,145)
Total Investments in the Fair Value Hierarchy	$ 502,702,452	$ 1,449,301,269	$ -	1,952,003,721
Investments Measured at NAV				471,779,855
Total Investments at Fair Value				$ 2,423,783,576

The following table summarizes investments for which fair value is measured using the NAV per share practical expedient as of December 31. There are no participant redemption restrictions for these investments; the redemption notice period is applicable only to the Plan.

NOTE 5 FAIR VALUE MEASUREMENT (CONTINUED)

Investment Type	2018 Fair Value	2017 Fair Value	Unfunded Commitments	Redemption Frequency	Redemption Notice Period
Collective Trust Funds:					
Index Collective Trust Fund	$ 115,601,684	$ 115,040,618	$ -	Monthly	Monthly
Real Estate Collective Trust Fund	74,715,777	69,157,976	-	Quarterly	Quarterly
Real Estate Investment Trust	1,397,628	1,716,292	-	Monthly	Monthly
Group Variable Annuity Policy	49,828,494	-	-	Monthly	Monthly
Private Equity Investments:					
Abbott Capital PVT EQ FD VI LP	27,013,715	29,848,775	502,500	Annual	Annual
Abbott Capital PE INV 2017 LP	1,848,805	358,214	8,102,500	Annual	Annual
Dover Street VIII Cayman Fund LP	8,253,525	12,591,653	2,000,000	Annual	Annual
Cayman Venture Fund LP	3,170,962	3,847,996	114,000	Annual	Annual
Mezzanine Distressed Debt Fund LP	750,456	1,044,245	152,000	Annual	Annual
Cayman Buyout Fund LP	9,227,961	12,986,115	1,260,000	Annual	Annual
Q-BLK Private Capital III (Offshore), LP	18,217,502	21,643,219	1,997,396	Annual	Annual
Dover Street VII Cayman Fund LP	5,228,331	7,834,129	1,655,198	Annual	Annual
Fort Washington Private Equity Investors VIII LP	16,338,656	14,626,142	6,800,000	Quarterly	Quarterly
Fort Washington Private Equity Investors VII LP	16,577,680	18,982,788	3,550,000	Quarterly	Quarterly
Harbourvest 2015 Global Fund LP	16,136,940	11,858,693	6,000,000	Annual	Annual
HIPEP VI Cayman Partnership Fund LP	14,046,760	17,070,128	995,537	Annual	Annual
Harbourvest Partners IX	16,194,251	15,066,377	3,890,000	Annual	Annual
Heitman America Real Estate	73,561,502	69,066,509	-	Quarterly	Quarterly
UBS Agrivest Farmland	51,172,934	49,039,986	-	Quarterly	Quarterly
	$ 519,283,563	$ 471,779,855			

The Abbott Capital PVT EQ FD VI LP seeks to maximize the return to its partners by participating in private equity and equity-related investments through a diversified portfolio of venture capital and growth equity, buyout, and special situations partnership and other limited liability vehicles.

The Abbott Capital PE INV 2017 LP seeks to generate significant returns for its Partners, principally through long-term capital appreciation, by acquiring, making, holding, funding, and disposing of privately-negotiated equity investments in underlying private equity funds including limited partnerships and other limited liability vehicles that operate as pooled investment vehicles.

The Dover Street VII Cayman Fund LP makes investments in limited partnerships or other pooled investment vehicles which invest in equity-oriented investments in growing or emerging companies in the United States, Europe, Latin America, Asia, and emerging private equity markets.

The Cayman Venture Fund LP seeks to make investments with a primary emphasis on equity-oriented investments in young, growing, or emerging companies or entities and other private equity transactions.

NOTE 5 FAIR VALUE MEASUREMENT (CONTINUED)

The Mezzanine Distressed Debt Fund LP and the HarbourVest 2015 Global Fund LP seek to make investments in limited partnerships or other pooled investment vehicles which, in turn make private equity investments and invest directly in private equity investments.

The Cayman Buyout Fund LP seeks to make investments with a primary emphasis on equity-oriented investments in venture capital, management buy-in, leveraged buy-out, mezzanine, special situations, and recapitalization transactions.

The Q-BLK Private Capital III (Offshore), L.P. seeks to make investments in a diversified portfolio of opportunities within the private capital sector.

The Dover Street VIII Fund seeks to make investments with a primary emphasis on equity-oriented investments in venture capital, management buy-in, leveraged buy-out, mezzanine, special situations, and recapitalization transactions.

The Fort Washington Private Equity Investors VIII LP Fund seeks to realize capital appreciation primarily by investing in a diversified portfolio of leading private equity funds that exhibit an attractive investment strategy.

The Group Variable Annuity Policy seeks absolute total return by investing directly long-only without leverage in income-producing publicly traded master limited partnerships ("MLPs") and midstream energy infrastructure C-corporations with a particular focus on energy sector MLPs.

The HarbourVest 2015 Global Fund seeks to make investments in limited partnerships or other pooled investment vehicles which, in turn make private equity investments and to invest directly in private equity investments.

The Fort Washington Private Equity Investors VII LP seeks to invest in (1) a diversified portfolio of primary market interests in pooled investment vehicles or managed private equity investment funds, organized as limited partnerships, limited liability companies or corporations, including venture capital, buyout, and distressed securities funds, (2) a diversified portfolio of secondary market interests in established pooled investment vehicles or managed private equity investment funds, organized as limited partnerships, limited liability companies or corporations, including venture capital, buyout and distressed securities funds, and (3) co-investment opportunities offered primarily by the partners or members of the investee partnerships and at the discretion of the General Partner, in co-investment opportunities offered primarily by other funds to affiliates of the General Partner.

The HIPEP VI Cayman Partnership Fund seeks to make investments in limited partnerships or other pooled investment vehicles which, in turn, make equity-oriented investments in management buy-in, management buy-out, leveraged buy-out, venture capital, growth and expansion capital, mezzanine, distressed and venture debt, special situation and recapitalization transactions and other private equity transactions.

NOTE 5 FAIR VALUE MEASUREMENT (CONTINUED)

The HarbourVest Partners IX is designed to hold investments in HarbourVest Partners IX-Cayman Buyout Fund L.P. in an amount equal to sixty percent of the aggregate capital commitments of the partners, in HarbourVest Partners IX-Cayman Venture Fund L.P. in an amount equal to thirty percent of the aggregate capital commitments of the partners and in HarbourVest Partners IX-Cayman Credit Opportunities Fund L.P. in an amount equal to ten percent of the aggregate Capital Commitments of the Partners. HarbourVest Partners IX-Cayman Buyout Fund L.P., HarbourVest Partners IX Cayman Venture Fund L.P. and HarbourVest Partners IX-Cayman Credit Opportunities Fund L.P., (collectively, the Partnerships) in turn, make investments as limited partners in HarbourVest Partners IX-Buyout Fund L.P., HarbourVest Partners IX-Venture Fund L.P. and HarbourVest Partners IX-Credit Opportunities Fund L.P., (collectively, the Master Funds) in an amount equal to the aggregate capital commitments of the partners.

The Heitman America Real Estate seeks to create a high-quality, low-risk, diversified portfolio of stabilized, income-producing real estate investments.

The UBS Agrivest Farmland seeks to invest in a diversified portfolio of row, vegetable and permanent crop farmland in select major agricultural states in the United States.

The Real Estate Investment Trusts seek to outperform the MSCI EAFE Net Index.

The Real Estate Collective Trust fund owns and seeks improved real estate projects with stabilized occupancies that produce a relatively high level of current income combined with moderate appreciation potential.

NOTE 6 DERIVATIVES AND HEDGING ACTIVITIES

The Trustees of the Master Trust have authorized certain investment managers to invest in derivative instruments for hedging purposes. As a global institutional investor, the Master Trust is in a position to take advantage of derivative instruments to ensure overall investment performance objectives are achieved as specified. Investment managers may utilize derivatives for risk control and substitution. Speculation is not permitted. Under no circumstances is a manager permitted to leverage the Master Trust's portfolio with derivatives. The Master Trust allows the use of forwards, futures, and options.

The Master Trust purchases derivatives in carrying out its international enhanced equity strategy. The types of derivatives include: (1) forward foreign currency exchange contracts principally used for risk control by hedging a portion of the Master Trust's portfolio to minimize exposure to foreign exchange risk, and (2) exchange traded futures to manage exposure to international markets more rapidly and less expensively than can be accomplished through the use of cash markets.

When engaging in forward exchange contracts, there is exposure to credit loss in the event of nonperformance by the counterparties to these transactions. To lessen this risk, individual counterparty exposure is limited to 25% of the total market value of exposure created by all derivatives (calculated at the time of purchase).

NOTE 6 DERIVATIVES AND HEDGING ACTIVITIES (CONTINUED)

The Master Trust does not anticipate nonperformance by counterparties to these contracts, and no material loss would be expected from any such nonperformance.

In connection with its derivative activities, the Master Trust generally enters into master netting agreements and collateral agreements with its counterparties. These agreements provide the Master Trust with the right in the event of a default by the counterparty, to net a counterparty's rights and obligations under the agreement and to liquidate and setoff collateral against any net amounts owed by the counterparty. The enforceability of the master netting agreement is taken into account in the Master Trust's risk management practices and application of counterparty credit limits. The following tables present information about the offsetting of derivative instruments and related collateral amounts:

NOTE 6 DERIVATIVES AND HEDGING ACTIVITIES (CONTINUED)

	At December 31, 2018					
				Amounts Not Offset in the Consolidated Statement of Financial Condition		
	Gross Amounts	Amounts Offset in the Consolidated Statement of Financial Condition	Net Amounts Presented in the Consolidated Statement of Financial Condition	Financial Instruments Collateral	Other Cash Collateral	Net Exposure
Derivative Assets:						
Australian Dollar	$ 7,322,410	$ 7,113,439	$ (208,971)	$ -	$ -	$ (208,971)
Canadian Dollar	10,512,110	10,217,464	(294,646)	-	-	(294,646)
Danish Krone	123,652	124,005	353	-	-	353
Euro Currency	4,952,088	4,958,878	6,790	-	-	6,790
Hong Kong Dollar	1,081,673	1,080,423	(1,250)	-	-	(1,250)
New Israeli Shekel	580,364	576,348	(4,016)	-	-	(4,016)
Japanese Yen	5,289,732	5,395,451	105,719	-	-	105,719
New Zealand Dollar	8,230,276	8,070,778	(159,498)	-	-	(159,498)
Norwegian Krone	1,023,299	1,001,983	(21,316)	-	-	(21,316)
Pound Sterling	1,163,672	1,153,069	(10,603)	-	-	(10,603)
Singapore Dollar	837,331	842,266	4,935	-	-	4,935
Swedish Krona	3,131,470	3,193,224	61,753	-	-	61,753
Swiss Franc	137,137	137,927	791	-	-	791
Total Derivative Assets	$ 44,385,215	$ 43,865,255	$ (519,959)	$ -	$ -	$ (519,959)
Derivative Liabilities:						
Australian Dollar	$ 24,933	$ 23,968	$ 965	$ -	$ -	$ 965
Canadian Dollar	4,410,726	4,301,897	108,830	-	-	108,830
Danish Krone	808,602	810,351	(1,749)	-	-	(1,749)
Euro Currency	14,772,137	14,815,654	(43,517)	-	-	(43,517)
Hong Kong Dollar	486,222	485,806	416	-	-	416
New Israeli Shekel	88,495	88,835	(340)	-	-	(340)
Japanese Yen	2,504,971	2,564,000	(59,029)	-	-	(59,029)
New Zealand Dollar	-	-	-	-	-	-
Norwegian Krone	202,914	204,522	(1,608)	-	-	(1,608)
Pound Sterling	1,717,470	1,724,490	(7,021)	-	-	(7,021)
Singapore Dollar	78,882	79,376	(494)	-	-	(494)
Swedish Krona	7,986,981	8,121,345	(134,364)	-	-	(134,364)
Swiss Franc	9,305,167	9,359,654	(54,487)	-	-	(54,487)
Total Derivative Liabilities	$ 42,387,499	$ 42,579,896	$ (192,397)	$ -	$ -	$ (192,397)

NOTE 6 DERIVATIVES AND HEDGING ACTIVITIES (CONTINUED)

	At December 31, 2017					
	Gross Amounts	Amounts Offset in the Consolidated Statement of Financial Condition	Net Amounts Presented in the Consolidated Statement of Financial Condition	Amounts Not Offset in the Consolidated Statement of Financial Condition		Net Exposure
				Financial Instruments Collateral	Other Cash Collateral	
Derivative Assets:						
Australian Dollar	$ 11,544,340	$ 11,919,555	$ 375,215	$ -	$ -	$ 375,215
Canadian Dollar	5,846,533	5,970,280	123,747	-	-	123,747
Danish Krone	395,000	400,799	5,799	-	-	5,799
Euro Currency	10,045,177	10,163,787	118,609	-	-	118,609
Hong Kong Dollar	1,109,126	1,108,333	(793)	-	-	(793)
New Israeli Shekel	19,457,802	19,371,608	(86,194)	-	-	(86,194)
Japanese Yen	607,262	612,906	5,644	-	-	5,644
New Zealand Dollar	7,086,232	7,246,615	160,383	-	-	160,383
Norwegian Krone	887,868	895,168	7,300	-	-	7,300
Pound Sterling	1,524,114	1,540,624	16,511	-	-	16,511
Singapore Dollar	466,914	471,225	4,310	-	-	4,310
Swedish Krona	60,153	60,742	589	-	-	589
Swiss Franc	375,486	378,679	3,194	-	-	3,194
Total Derivative Assets	$ 59,406,008	$ 60,140,321	$ 734,314	$ -	$ -	$ 734,314
Derivative Liabilities:						
Australian Dollar	$ 278,245	$ 285,437	$ (7,193)	$ -	$ -	$ (7,193)
Canadian Dollar	213,565	216,506	(2,940)	-	-	(2,940)
Danish Krone	673,893	679,236	(5,342)	-	-	(5,342)
Euro Currency	4,123,468	4,184,947	(61,479)	-	-	(61,479)
Hong Kong Dollar	478,232	478,001	231	-	-	231
New Israeli Shekel	388,002	384,521	3,480	-	-	3,480
Japanese Yen	28,450	28,608	(158)	-	-	(158)
New Zealand Dollar	5,435,129	5,636,573	(201,444)	-	-	(201,444)
Norwegian Krone	4,862,109	4,961,895	(99,786)	-	-	(99,786)
Pound Sterling	7,569,589	7,654,300	(84,711)	-	-	(84,711)
Singapore Dollar	293,531	295,920	(2,389)	-	-	(2,389)
Swedish Krona	12,237,179	12,506,582	(269,403)	-	-	(269,403)
Swiss Franc	13,759,652	13,898,663	(139,011)	-	-	(139,011)
Total Derivative Liabilities	$ 50,341,043	$ 51,211,188	$ (870,145)	$ -	$ -	$ (870,145)

The following is a summary of the significant accounting policies associated with the Master Trust's use of derivatives:

NOTE 6 DERIVATIVES AND HEDGING ACTIVITIES (CONTINUED)

Forward Foreign Currency Exchange Contracts

Forward foreign currency exchange contracts (forward currency contracts) are commitments to purchase or sell foreign currency at a future settlement date and at a negotiated rate. The Master Trust's holdings in forward foreign exchange contracts also includes foreign exchange spot transactions which are forward foreign exchanges that are conducted in the short term to either convert foreign currency earnings to U.S. dollars or to purchase foreign currencies to satisfy forward activity obligations that are coming due in the near term. The objective is to minimize exchange rate risk. Equity investments in foreign markets have both equity risk and foreign exchange risk.

Forward currency contracts are marked-to-market at the prevailing forward exchange rate of the underlying currencies and the difference between the contract value and the market value is recorded as unrealized appreciation (depreciation) in the Master Trust's net assets. This amount also represents the fair value of the forward currency contracts and is reflected in the Investment in Master Trust on the Statements of Net Assets Available for Benefits.

When the forward exchange contract is closed, the Master Trust transfers the unrealized appreciation (depreciation) to a realized gain (loss) equal to the change in value of the forward exchange contract when it was opened and the value at the time it was closed or offset. Sales and purchases of forward currency contracts having the same settlement date and broker is offset and any gain (loss) is realized on the date of offset. The gain (loss) from forward currency contracts are recognized in Master Trust Investment Income on the Statements of Changes in Net Assets Available for Benefits. The amount of gain (loss) recognized on foreign currency contracts is $715,670 and $(430,175) for the years ended December 31, 2018 and 2017, respectively.

Certain risks may arise entering into forward currency contracts, including the potential inability of counterparties to meet their obligations. Additionally, when utilizing forward currency contracts to hedge, the Master Trust gives up the opportunity to profit from favorable exchange rate movements during the term of the contract.

NOTE 6 DERIVATIVES AND HEDGING ACTIVITIES (CONTINUED)

Forward Foreign Currency Exchange Contracts (Continued)

A summary of open forward currency contracts of the Master Trust at December 31, 2018 is presented below:

	Currency Type Purchased		
	Value Date	Notional Value	Unrealized Appreciation (Depreciation)
Australian Dollar	12/31/2018	$ 7,113,439	$ (208,971)
Canadian Dollar	12/31/2018	10,217,464	(294,646)
Danish Krone	12/31/2018	124,005	353
Euro Currency	12/31/2018	4,957,878	6,790
Hong Kong Dollar	12/31/2018	1,080,423	(1,250)
New Israeli Shekel	12/31/2018	576,348	(4,016)
Japanese Yen	12/31/2018	5,395,451	105,719
New Zealand Dollar	12/31/2018	8,070,778	(159,498)
Norwegian Krone	12/31/2018	1,001,983	(21,316)
Pound Sterling	12/31/2018	1,153,069	(10,603)
Singapore Dollar	12/31/2018	842,266	4,935
Swedish Krona	12/31/2018	3,193,224	61,753
Swiss Franc	12/31/2018	137,927	791
Total		$ 43,864,255	$ (519,959)

There were no short-term foreign exchange spot purchases.

	Currency Type Sold		
	Value Date	Notional Value	Unrealized Appreciation (Depreciation)
Australian Dollar	12/31/2018	$ 23,968	$ 965
Canadian Dollar	12/31/2018	4,301,897	108,830
Danish Krone	12/31/2018	810,351	(1,749)
Euro Currency	12/31/2018	14,815,654	(43,517)
Hong Kong Dollar	12/31/2018	486,806	416
New Israeli Shekel	12/31/2018	88,835	(340)
Japanese Yen	12/31/2018	2,564,000	(59,029)
New Zealand Dollar	12/31/2018	-	-
Norwegian Krone	12/31/2018	204,522	(1,608)
Pound Sterling	12/31/2018	1,724,490	(7,021)
Singapore Dollar	12/31/2018	79,376	(494)
Swedish Krona	12/31/2018	8,121,345	(134,364)
Swiss Franc	12/31/2018	9,359,654	(54,487)
Total		$ 42,580,896	$ (192,397)

There were no short-term foreign exchange spot sales.

NOTE 6 DERIVATIVES AND HEDGING ACTIVITIES (CONTINUED)

Forward Foreign Currency Exchange Contracts (Continued)

A summary of the open forward currency contracts of the Master Trust at December 31, 2017 is presented below:

	Currency Type Purchased		
	Value Date	Notional Value	Unrealized Appreciation (Depreciation)
Australian Dollar	12/31/2017	$ 11,919,555	$ 375,215
Canadian Dollar	12/31/2017	5,970,280	123,747
Danish Krone	12/31/2017	400,799	5,799
Euro Currency	12/31/2017	10,163,787	118,609
Hong Kong Dollar	12/31/2017	1,108,333	(793)
New Israeli Shekel	12/31/2017	612,906	5,644
Japanese Yen	12/31/2017	19,371,608	(86,194)
New Zealand Dollar	12/31/2017	7,246,615	160,383
Norwegian Krone	12/31/2017	895,168	7,300
Pound Sterling	12/31/2017	1,540,624	16,511
Singapore Dollar	12/31/2017	471,225	4,310
Swedish Krona	12/31/2017	60,742	589
Swiss Franc	12/31/2017	378,679	3,194
Total		$ 60,140,321	$ 734,314

There were no short-term foreign exchange spot purchases.

	Currency Type Sold		
	Value Date	Notional Value	Unrealized Appreciation (Depreciation)
Australian Dollar	12/31/2017	$ 285,437	$ (7,192)
Canadian Dollar	12/31/2017	216,506	(2,940)
Danish Krone	12/31/2017	679,236	(5,342)
Euro Currency	12/31/2017	4,184,947	(61,479)
Hong Kong Dollar	12/31/2017	478,001	230
New Israeli Shekel	12/31/2017	28,608	(158)
Japanese Yen	12/31/2017	384,521	3,480
New Zealand Dollar	12/31/2017	5,636,573	(201,444)
Norwegian Krone	12/31/2017	4,961,895	(99,786)
Pound Sterling	12/31/2017	7,654,300	(84,711)
Singapore Dollar	12/31/2017	295,920	(2,389)
Swedish Krona	12/31/2017	12,506,582	(269,403)
Swiss Franc	12/31/2017	13,898,663	(139,011)
Total		$ 51,211,188	$ (870,145)

There were no short-term foreign exchange spot sales.

NOTE 6 DERIVATIVES AND HEDGING ACTIVITIES (CONTINUED)

Exchange Traded Futures Contracts

An exchange traded futures contract is a contractual agreement to make or take delivery of a standardized financial instrument at a specified future date in accordance with terms specified by a regulated futures exchange.

The Master Trust uses equity index futures contracts on broad indices to manage exposure to international markets. Buying futures tends to increase the Master Trust's exposure to the underlying market. Selling futures tends to decrease the Master Trust's exposure to the underlying market, or hedge the fair value of other markets. The Master Trust does not employ leverage in its use of futures, thus cash balances are maintained at a level at least equal to the contract value of the future.

Futures contracts are valued at the last settlement price at the end of each day on the exchange upon which they are traded. Upon entering into a future contract, the Master Trust is required to deposit either in cash or securities an amount equal to a certain percentage of nominal value of the contract (initial margin). Pursuant to the future contract, the Master Trust agrees to receive from, or pay to, the broker an amount of cash equal to the daily fluctuation in the value of the futures contract. Such receipts or payments are known as "variation margin" which are generally settled daily and are included in the realized gains (losses) on future contracts. The Master Trust records a variation in margin receivable or payable in net assets for variation margins which have not yet been paid at the end of the year. This amount also represents the fair value of the exchange traded futures contracts and is reflected in the Investment in Master Trust on the Statements of Net Assets Available for Benefits.

Future contracts involve, to varying degrees, credit and market risks. The Master Trust enters into futures contracts on exchanges where the exchange acts as the counterparty to the transaction. Thus, credit risk on such transactions is limited to the failure of the exchange.

The daily settlement on the futures contracts serves to greatly reduce credit risk. Losses in value may arise from changes in the value of the underlying instrument or if there is an illiquid secondary market for the contracts. In addition, there is a risk that there may not be an exact correlation between a future contract and the underlying index or security. The gain (loss) from exchange traded futures contracts are recognized in Master Trust Investment Income on the Statements of Changes in Net Assets Available for Benefits. The amount of gain (loss) recognized on exchange-traded future contracts is $(2,168,879) and $3,356,558 for the years ended December 31, 2018 and 2017, respectively.

At December 31, 2018 and 2017, cash of $1,406,022 and $2,530,406 was pledged as collateral for open exchange traded futures contracts, respectively.

NOTE 6 DERIVATIVES AND HEDGING ACTIVITIES (CONTINUED)

Exchange Traded Futures Contracts (Continued)

A summary of the open futures, included in domestic and international equity securities of the Master Trust, at December 31, 2018 is as follows:

Long Contracts	Number of Contracts Buy (Sell)	Notional Amount	Fair Value Asset (Liability)
TOPIX INDX FUTR	62	925,970,000	$ 8,439,776
FTSE 100 IDX FUT	22	1,464,980	1,865,798
FTSE/MIB IDX FUT	11	1,001,330	1,144,670
HANG SENG IDX FUT	17	21,975,900	2,806,861
MSCI SING IX ETS	31	1,059,270	777,161

Short Contracts	Number of Contracts Buy (Sell)	Notional Amount	Fair Value Asset (Liability)
OMXS30 IND FUTURE	(106)	$ (14,927,450)	$ (1,683,702)
SPI 200 FUTURES	(2)	(278,050)	(195,747)
CAC40 10 EURO FUT	(28)	(1,323,980)	(1,513,507)
S+P/TSX 60 IX FUT	(24)	(4,115,040)	(3,012,916)
IBEX 35 INDX FUTR	(19)	(1,618,249)	(1,849,901)
DAX INDEX FUTURE	(1)	(264,038)	(301,834)

NOTE 6 DERIVATIVES AND HEDGING ACTIVITIES (CONTINUED)

Exchange Traded Futures Contracts (Continued)

A summary of the open futures, included in domestic and international equity securities of the Master Trust, at December 31, 2017 is as follows:

Long Contracts	Number of Contracts Buy (Sell)	Notional Amount	Fair Value Asset (Liability)
CAC40 10 EURO FUT	4	$ 212,420	$ 255,074
MSCI SING IX ETS	6	232,860	174,244
AMSTERDAM IDX FUT	13	1,415,700	1,699,973
DAX INDEX FUTURE	14	4,518,500	5,425,816
FTSE/MIB IDX FUT	24	2,610,840	3,135,097
HANG SENG IDX FUT	32	47,916,800	6,129,584
TOPIX INDX FUTR	72	1,308,240,000	11,613,316

Short Contracts	Number of Contracts Buy (Sell)	Notional Amount	Fair Value Asset (Liability)
OMXS30 IND FUTURE	(119)	$ (18,733,575)	$ (2,288,070)
SPI 200 FUTURES	(70)	(10,535,000)	(8,239,951)
FTSE 100 IDX FUT	(24)	(1,833,120)	(2,479,753)
S+P/TSX 60 IX FUT	(23)	(4,404,040)	(3,514,937)
IBEX 35 INDX FUTR	(17)	(1,703,536)	(2,045,606)
US 10YR NOTE (CBT)	(14)	(1,736,656)	(1,736,656)

NOTE 7 RECONCILIATION OF FINANCIAL STATEMENTS TO FORM 5500

The following is a reconciliation of net assets available for benefits per the financial statements to Form 5500 as of December 31:

	2018	2017
Net Assets Available for Pension Benefits Per the Financial Statements	$ 2,033,500,901	$ 2,231,868,661
Net Assets Held in 401(h) Accounts Included as Assets in Form 5500	203,419,688	213,254,064
Net Assets Available for Benefits Per Form 5500	$ 2,236,920,589	$ 2,445,122,725

NOTE 7 RECONCILIATION OF FINANCIAL STATEMENTS TO FORM 5500 (CONTINUED)

The following is a reconciliation of the changes in net assets available for benefits per the financial statements to Form 5500 for the year ended December 31, 2018:

	2018
Decrease in Net Assets Available for Benefits Per the Financial Statements	$ (198,367,760)
Loss on 401(h) Account	(9,466,330)
Contributions Made to 401(h) Account	1,563,800
Expenses Paid by 401(h) Account	(201,241)
Transfers From 401(h) Account	(1,730,639)
2018 401(h) Prepaid Expenses	(5,029)
2017 401(h) Prepaid Expenses	5,062
Increase in Net Assets Available for Benefits Per Form 5500	$ (208,202,136)

The net assets of the 401(h) accounts included in Form 5500 are not available to pay pension benefits but can be used only to pay certain nonpension retiree medical benefits; therefore, these assets and any components of their changes are excluded from net assets and changes in net assets available for pension benefits per the financial statements.

NOTE 8 ACTUARIAL PRESENT VALUE OF ACCUMULATED PROGRAM BENEFITS

The Program's actuary estimates the actuarial present value of accumulated program benefits, which is the amount that results from applying actuarial assumptions to reflect the time value of money (through discounts for interest) and the probability of payment (by means of reductions such as for death, withdrawal, or retirement) between the valuation date and the expected date of payment. Benefits to be provided via annuity contracts excluded from plan assets are excluded from accumulated plan benefits.

The accumulated benefit information as of the beginning of the Program year is as follows:

	December 31, 2017
Actuarial Present Value of Accumulated Benefits:	
Vested Benefits of Participants Currently Receiving Benefits	$ 609,058,919
Other Vested Benefits	1,216,359,338
Nonvested Benefits	214,341,806
Total Actuarial Present Value of Accumulated Benefits	$ 2,039,760,063

NOTE 8 ACTUARIAL PRESENT VALUE OF ACCUMULATED PROGRAM BENEFITS (CONTINUED)

The actuarial present value of accumulated Program benefits increased as a result of the following:

Present Value of Accumulated Program Benefits at December 31, 2016	$ 1,957,147,788
Change During the Year Due to:	
Benefits Accumulated	98,330,012
Actuarial Losses	20,046,452
Decrease in the Discount Period	129,992,237
Actual Benefits Paid	(200,231,652)
Change of Assumptions	34,475,226
Present Value of Accumulated Program Benefits at December 31, 2017	$ 2,039,760,063

Changes in actuarial assumptions from December 31, 2016 include an update to the mortality table to reflect the Society of Actuaries RP-2018 mortality table generationally projected using scale MP-2018 from the RP-2017 mortality table generationally projected using scale MP-2017.

Significant assumptions underlying the actuarial computations are as follows:

	2017
Interest Rate	7.00%
Mortality Basis	Male and Female Society of Actuaries' RP-2018 Employees mortality table generationally projected with Scale MP-2018 for participants before they begin receiving payment. Male and Female Society of Actuaries' RP-2018 for Healthy Annuitants mortality table generationally projected with Scale MP-2018 for participants currently in payment and once participants not in payment status move to in payment status.
Retirement Age	Variable based on age, using a low of 4% for those 55 to 59 and a high of 100% for those 70 or over, with 5% added in the first year of eligibility for unreduced retirement under the Rule of 85, and 3%-5% for each year thereafter, up to age 65.
Cost Method	Aggregate Cost Method

The foregoing actuarial assumptions are based on the assumption that the Program will continue. Were the Program to terminate, different actuarial assumptions and other factors might be applicable in determining the actuarial present value of accumulated program benefits. The computation of the actuarial present value of accumulated program benefits was made as of January 1, 2018. Had the valuation been performed as of December 31, 2017 there would be no material differences.

NOTE 9 FUNDING POLICY

The Program is funded through Employer and participant contributions that are specified by the Employer. These contributions, plus earnings that accumulate tax-free in the Program's unallocated share of the Master Trust, are intended to be sufficient to fund the Program's past and future service cost on an ongoing basis.

NOTE 10 PROGRAM TERMINATION

Although they have not expressed any intention to do so, NTCA and Participating Employers have the right under the Program to discontinue contributions at any time and to terminate their participation in the Program subject to certain advance notice requirements. Also, the NTCA Board of Directors has the authority to terminate the Program.

Should the Program terminate at some future time, a particular participant's accumulated benefits will be paid dependent on the priority of those benefits and the levels of benefits guaranteed by the PBGC at that time. The Program's net assets generally will not be available on a *pro rata* basis to provide participants' benefits, due to the priority assigned different benefit categories under ERISA Section 4044. Some benefits may be fully or partially provided by the then-existing assets and the PBGC guaranty, while other benefits may not be provided at all.

NOTE 11 FEDERAL INCOME TAX STATUS

The Program obtained its latest favorable determination letter from the Internal Revenue Service (IRS) on January 9, 2014. In that letter, the IRS stated that the Program, as designed, was in compliance with the applicable requirements of the Internal Revenue Code. The IRS also indicated, in issuing this letter that the member companies participating in the Program could rely on this letter without having to file individual letters to have the IRS determine if the Program, as they adopted it, is in compliance. While the Program has been restated and further amended since the date of this letter, the Program administrator and the Program's ERISA counsel believe that the Program continues to be designed in compliance with the applicable requirements of the IRC. Therefore, no provision for income taxes has been included in the Program's financial statements.

Accounting principles generally accepted in the United States of America require the Program's management to evaluate tax positions taken by the Program and recognize a tax liability (or asset) if the Program has taken an uncertain position that more likely than not would not be sustained upon examination by the IRS. The Program is subject to routine audits by taxing jurisdictions; however, there are currently no audits for any tax periods in progress.

NOTE 12 RELATED PARTY AND PARTY IN INTEREST TRANSACTIONS

The Program has entered into an agreement with Services Management Corporation (SMC), a wholly owned subsidiary of NTCA, under which SMC has been designated Contract Administrator for the Program. SMC provides comprehensive third-party administrative services to the Program. SMC is compensated for these services on a fixed-fee basis.

Total fees to SMC under this agreement were $2,867,578 and $2,854,033 for the years ended December 31, 2018 and 2017, respectively.

NOTE 13 RISKS AND UNCERTAINTIES

The Program invests in various investment instruments. Investments are exposed to various risks such as interest rate, market, and credit risks. Due to the level of risk associated with certain investment securities, it is at least reasonably possible that changes in the values of investment securities will occur in the near term and that such changes could materially affect the amounts reported in the statements of net assets available for benefits.

Program contributions are made and the actuarial present value of accumulated program benefits are reported based on certain assumptions pertaining to interest rates, inflation rates and employee demographics, all of which are subject to change. Due to uncertainties inherent in the estimations and assumptions process, it is at least reasonably possible that changes in these estimates and assumptions in the near term would be material to the financial statements.

Schedule SB - Statement by Enrolled Actuary

Plan Name: R & S Program for Employees of NTCA and Its Members
EIN / PN: 52-0741336/333
Plan Sponsor: National Telecommunications Cooperative Association

Plan Sponsor	National Telecommunications Cooperative Association
EIN / PN	52-0741336/333
Plan Name	R & S Program for Employees of NTCA and Its Members
Valuation Date	January 1, 2018
Enrolled Actuary	Gibbon, Mary E.
Enrollment Number	17-06921

The actuarial assumptions and methods, in combination, represent the enrolled actuary's best estimate of anticipated experience under the plan, subject to the following conditions:

The actuarial valuation, on which the information in this Schedule SB is based, has been prepared in reliance upon the employee and financial data furnished by the plan administrator and the trustee. The enrolled actuary has not made a rigorous check of the accuracy of this information but has accepted it after reviewing it and concluding it is reasonable in relation to similar information furnished in previous years. The amounts of contributions and dates paid shown in Line 3 of Schedule B were listed in reliance on information provided by the plan administrator and/or trustee.

SCHEDULE SB (Form 5500)

Department of the Treasury
Internal Revenue Service

Department of Labor
Employee Benefits Security Administration

Pension Benefit Guaranty Corporation

Single-Employer Defined Benefit Plan Actuarial Information

This schedule is required to be filed under section 104 of the Employee Retirement Income Security Act of 1974 (ERISA) and section 6059 of the Internal Revenue Code (the Code).

▶ **File as an attachment to Form 5500 or 5500-SF.**

OMB No. 1210-0110

2018

This Form is Open to Public Inspection

For calendar plan year 2018 or fiscal plan year beginning 01/01/2018 and ending 12/31/2018

▶ **Round off amounts to nearest dollar.**

▶ **Caution:** A penalty of $1,000 will be assessed for late filing of this report unless reasonable cause is established.

A Name of plan
R&S Program for Employees of NTCA and Its Members

B Three-digit plan number (PN) ▶ 333

C Plan sponsor's name as shown on line 2a of Form 5500 or 5500-SF
NATIONAL TELECOMMUNICATIONS COOPERATIVE ASSOCIATION

D Employer Identification Number (EIN)
52-0741336

E Type of plan: ☐ Single ☐ Multiple-A ☒ Multiple-B

F Prior year plan size: ☐ 100 or fewer ☐ 101-500 ☒ More than 500

Part I Basic Information

1 Enter the valuation date: Month 01 Day 01 Year 2018

2 Assets:

a Market value	**2a**	2,233,935,111
b Actuarial value	**2b**	2,097,817,954

3 Funding target/participant count breakdown

	(1) Number of participants	(2) Vested Funding Target	(3) Total Funding Target
a For retired participants and beneficiaries receiving payment	2,421	675,929,280	675,929,280
b For terminated vested participants	2,234	61,692,775	61,692,775
c For active participants	12,092	1,243,990,673	1,465,963,971
d Total	16,747	1,981,612,728	2,203,586,026

4 If the plan is in at-risk status, check the box and complete lines (a) and (b) ☐

a Funding target disregarding prescribed at-risk assumptions	**4a**	
b Funding target reflecting at-risk assumptions, but disregarding transition rule for plans that have been in at-risk status for fewer than five consecutive years and disregarding loading factor	**4b**	
5 Effective interest rate	**5**	5.89%
6 Target normal cost	**6**	105,413,121

Statement by Enrolled Actuary

To the best of my knowledge, the information supplied in this schedule and accompanying schedules, statements and attachments, if any, is complete and accurate. Each prescribed assumption was applied in accordance with applicable law and regulations. In my opinion, each other assumption is reasonable (taking into account the experience of the plan and reasonable expectations) and such other assumptions, in combination, offer my best estimate of anticipated experience under the plan.

SIGN HERE

ME Gibbon — Signature of actuary

10/3/19 — Date

Mary E Gibbon — Type or print name of actuary

1706921 — Most recent enrollment number

Willis Towers Watson US LLC — Firm name

703-258-8000 — Telephone number (including area code)

800 N. GLEBE ROAD
ARLINGTON VA 22203 — Address of the firm

If the actuary has not fully reflected any regulation or ruling promulgated under the statute in completing this schedule, check the box and see instructions ☐

Part II Beginning of Year Carryover and Prefunding Balances

		(a) Carryover balance	(b) Prefunding balance
7	Balance at beginning of prior year after applicable adjustments (line 13 from prior year)		
8	Portion elected for use to offset prior year's funding requirement (line 35 from prior year)		
9	Amount remaining (line 7 minus line 8)		
10	Interest on line 9 using prior year's actual return of _____%		
11	Prior year's excess contributions to be added to prefunding balance:		
	a Present value of excess contributions (line 38a from prior year)		
	b(1) Interest on the excess, if any, of line 38a over line 38b from prior year Schedule SB, using prior year's effective interest rate of 6.07%		
	b(2) Interest on line 38b from prior year Schedule SB, using prior year's actual return		
	c Total available at beginning of current plan year to add to prefunding balance		
	d Portion of (c) to be added to prefunding balance		
12	Other reductions in balances due to elections or deemed elections		
13	Balance at beginning of current year (line 9 + line 10 + line 11d – line 12)		

Part III Funding Percentages

14	Funding target attainment percentage	14	95.02%
15	Adjusted funding target attainment percentage	15	%
16	Prior year's funding percentage for purposes of determining whether carryover/prefunding balances may be used to reduce current year's funding requirement	16	%
17	If the current value of the assets of the plan is less than 70 percent of the funding target, enter such percentage.	17	%

Part IV Contributions and Liquidity Shortfalls

18 Contributions made to the plan for the plan year by employer(s) and employees:

(a) Date (MM-DD-YYYY)	(b) Amount paid by employer(s)	(c) Amount paid by employees	(a) Date (MM-DD-YYYY)	(b) Amount paid by employer(s)	(c) Amount paid by employees
	109,013,848	19,339,718			
			Totals ► 18(b)	109,013,848	18(c) 19,339,718

19 Discounted employer contributions -- see instructions for small plan with a valuation date after the beginning of the year:

a	Contributions allocated toward unpaid minimum required contributions from prior years	19a
b	Contributions made to avoid restrictions adjusted to valuation date	19b
c	Contributions allocated toward minimum required contribution for current year adjusted to valuation date	19c

20 Quarterly contributions and liquidity shortfalls:

a Did the plan have a "funding shortfall" for the prior year? [ ] Yes [ ] No

b If line 20a is "Yes," were required quarterly installments for the current year made in a timely manner? [ ] Yes [ ] No

c If line 20a is "Yes," see instructions and complete the following table as applicable:

Liquidity shortfall as of end of quarter of this plan year

(1) 1st	(2) 2nd	(3) 3rd	(4) 4th

Part V Assumptions Used to Determine Funding Target and Target Normal Cost

21 Discount rate:

a Segment rates:

1st segment:	2nd segment:	3rd segment:	
3.92 %	5.52 %	6.29%	☐ N/A, full yield curve used

b Applicable month (enter code) — **21b**: 4

22 Weighted average retirement age — **22**: 62

23 Mortality table(s) (see instructions)

Prior regulation: ☐ Prescribed - combined ☐ Prescribed - separate ☐ Substitute

Current regulation: ☐ Prescribed - combined ☒ Prescribed - separate ☐ Substitute

Part VI Miscellaneous Items

24 Has a change been made in the non-prescribed actuarial assumptions for the current plan year? If "Yes," see instructions regarding required attachment. ☐ Yes ☐ No

25 Has a method change been made for the current plan year? If "Yes," see instructions regarding required attachment. ☐ Yes ☐ No

26 Is the plan required to provide a Schedule of Active Participants? If "Yes," see instructions regarding required attachment. ☐ Yes ☐ No

27 If the plan is subject to alternative funding rules, enter applicable code and see instructions regarding attachment	**27**	1

Part VII Reconciliation of Unpaid Minimum Required Contributions For Prior Years

28 Unpaid minimum required contributions for all prior years	**28**	
29 Discounted employer contributions allocated toward unpaid minimum required contributions from prior years (line 19a)	**29**	
30 Remaining amount of unpaid minimum required contributions (line 28 minus line 29)	**30**	

Part VIII Minimum Required Contribution For Current Year

31 Target normal cost and excess assets (see instructions):

a Target normal cost (line 6)	**31a**	
b Excess assets, if applicable, but not greater than line 31a	**31b**	

32 Amortization installments:

	Outstanding Balance	Installment
a Net shortfall amortization installment		
b Waiver amortization installment		

33 If a waiver has been approved for this plan year, enter the date of the ruling letter granting the approval (Month _____ Day _____ Year _____) and the waived amount	**33**	
34 Total funding requirement before reflecting carryover/prefunding balances (lines 31a - 31b + 32a + 32b - 33)	**34**	

	Carryover balance	Prefunding balance	Total balance
35 Balances elected for use to offset funding requirement			

36 Additional cash requirement (line 34 minus line 35)	**36**	
37 Contributions allocated toward minimum required contribution for current year adjusted to valuation date (line 19c)	**37**	
38 Present value of excess contributions for current year (see instructions)		
a Total (excess, if any, of line 37 over line 36)	**38a**	
b Portion included in line 38a attributable to use of prefunding and funding standard carryover balances	**38b**	
39 Unpaid minimum required contribution for current year (excess, if any, of line 36 over line 37)	**39**	
40 Unpaid minimum required contributions for all years	**40**	

Part IX Pension Funding Relief Under Pension Relief Act of 2010 (See Instructions)

41 If an election was made to use PRA 2010 funding relief for this plan:

a Schedule elected ☐ 2 plus 7 years ☐ 15 years

b Eligible plan year(s) for which the election in line 41a was made ☐ 2008 ☐ 2009 ☐ 2010 ☐ 2011

Schedule SB, Part V

Statement of Actuarial Assumptions/Methods

Plan Sponsor National Telecommunications Cooperative Association

EIN/PN 52-0741336/333

Interest Rates

Valuation 7.00% (unchanged from 7.00% last year)

RPA'94 Current liability 6.29% (changed from 6.48% last year)

PPA Funding Target

	Segment 1	Segment 2	Segment 3
Current Year	3.92%	5.52%	6.29%
Prior Year	4.16%	5.72%	6.48%

PBGC Premium Funding Target

	Segment 1	Segment 2	Segment 3
Current Year	2.33%	3.55%	4.11%
Prior Year	2.04%	4.03%	4.82%

Lump Sums Actual 3-segment yield curve for distributions assumed to occur in valuation year and assumed 3-segment yield curve for distributions assumed to occur in future years, based on following schedule:

Year	Segment 1	Segment 2	Segment 3
2018	1.93%	3.57%	4.36%
2019+	4.00%	5.50%	6.25%

In the prior year, the 1st, 2nd, and 3rd segment interest rates for distributions during 2018 and later were 4.00%, 5.50%, and 6.50%, respectively.

Covered Pay Assumed Plan compensation for the year beginning on the valuation date was determined as the base rate of pay on the valuation date.

Compensation Increases The annual rate of a participant's salary increase was assumed to be based on the participant's age. The following shows the assumed rates of increase at illustrative ages:

Age	Rate
25	7.60%
30	5.90%
35	5.20%
40	4.70%
45	3.80%
50	3.30%
55	3.10%
60	3.00%
65	3.00%

Schedule SB, Part V

Future Increases in Maximum Benefits, Social Security Wage Base, and Plan Compensation Limitations	Projected benefits are limited to the maximum presently allowed under IRC Section 415. Plan compensation is limited to the maximum presently allowed under IRC Section 401(a)(17). No provision is made for future increases in the maximum annual benefit, Social Security Wage Base, or compensation limit.
Assumed Cost-of-Living Adjustments	2.50%
Administrative Expenses	The amount included this year for Administrative Expenses is $14,726,009. This amount is estimated by assuming last year's administrative expenses, increased by 2.5%, plus actual PBGC premiums for the year.
Mortality (other than for lump sum distribution)	• For RPA '94 Current Liability and Funding Target: Male and Female 2018 PPA Static Mortality for Non-Annuitants is used for participants in the valuation before they begin receiving payment. Male and Female 2018 PPA Static Mortality for Annuitants is used for participants currently in payment and once participants not in payment status move to in payment status. • For ASC960: Male and Female Society of Actuaries' RP-2018 Employees mortality table generationally projected with Scale MP-2018 for participants before they begin receiving payment. Male and Female Society of Actuaries' RP-2018 for Healthy Annuitants mortality table generationally projected with Scale MP-2018 for participants currently in payment and once participants not in payment status move to in payment status. • For all other purposes: Separate rates for disabled participants (based on RP-2017 "Disabled Retiree" table), non-annuitants (based on RP-2017 "Employees" table) and annuitants (based on RP-2017 "Healthy Annuitants" table), all generationally projected using Scale MP-2017. • Last year for RPA '94 Current Liability and Funding Target: Male and Female 2017 PPA Static Mortality for Non-Annuitants was used for participants in the valuation before they begin receiving payment. Male and Female 2017 PPA Static Mortality for Annuitants was used for participants currently in payment and once participants not in payment status move to in payment status. • Last Year for ASC960: Male and Female Society of Actuaries' RP-2017 Employees mortality table generationally projected with Scale MP-2017 for participants before they begin receiving payment. Male and Female Society of Actuaries' RP-2017 for Healthy Annuitants mortality table generationally projected with Scale MP-2017 for participants currently in payment and once participants not in payment status move to in payment status. • Last Year for all other purposes: Separate rates for disabled participants (based on RP-2016 "Disabled Retiree" table), non-annuitants (based on RP-2016 "Employees" table) and annuitants (based on RP-2016 "Healthy Annuitants" table), all generationally projected using Scale MP-2016

Schedule SB, Part V

Mortality for lump sum distributions

- For RPA '94 Current Liability and Funding Target: the 2018 mortality table specified in Internal Revenue Code section 417(e). In prior year, the 2017 mortality table specified in Internal Revenue Code section 417(e).

- For all other purposes: The 2018 mortality table specified in Internal Revenue Code section 417 (e) is used for lump sum distributions in 2018. The Society of Actuaries' RP-2017 mortality table generationally projected with Scale MP-2017 for lump sum distributions after 2018. In the prior year, the 2017 mortality table specified in Internal Revenue Code section 417 (e) was used for distributions in 2017 and the Society of Actuaries' RP-2016 mortality table generationally projected with Scale MP-2016 for lump sum distributions after 2017.

Retirement

The following rates of retirement were used:

Retirement Rates for Non-ROE Eligible participants:

Age	Rate
55-59	4.0%
60	7.0%
61	10.0%
62-63	15.0%
64	20.0%
65	40.0%
66-69	25.0%
70	100.0%

Retirement Rates for ROE Eligible participants under age 65 with 85 points:

Age	Rate
55-59	15.0%
60-64	20.0%
65	40.0%
66-69	25.0%
70	100.0%

Retirement Rates for ROE Eligible participants under age 65 without 85 points:

Age	Rate
55-59	2.0%
60-61	7.0%
62-63	15.0%
64	20.0%
65	40.0%
66-69	25.0%
70	100.0%

Schedule SB, Part V

Representative Termination Rates not due to disability, retirement or mortality

Representative termination rates if service less than 5 years:

Service	Rate
0	16.0%
1	13.0%
2	10.0%
3	9.0%
4	7.0%

Representative termination rates if service is greater than or equal to 5 years:

Service	Rate
20	6.6%
25	6.6%
30	3.6%
35	3.8%
40	3.1%
45	2.8%
50	2.6%
55	0.0%
60 and over	0.0%

Disability Rates

None.

Form of Payment

65% of retirements are assumed to elect a lump sum at termination or retirement. Of the remaining 35%, 30% are assumed to elect a ten-year certain annuity and 70% are assumed to elect a 75% joint and survivor annuity. Vested participants with termination dates in the year prior to the valuation are assumed to elect a lump sum. Terminated vested participants who are eligible for Rule of 85 and will reach 85 points before age 65 are assumed to elect a lump sum in the year they reach 85 points. All other terminated vested participants are assumed to elect a life annuity with payments guaranteed for 10 years commencing at age 65.

Marriage

Of all active participants, 85% are assumed to be married.

Spouse Age

Wife 3 years younger than husband.

Inclusion Date

The valuation date coincident with or next following the date on which the employee becomes a participant.

Schedule SB, Part V

Employees	It is assumed that there will be no new or rehired employees.
Employees at Withdrawn Employers	Active employees at withdrawn employers are assumed to commence benefits at the same rates as active employees at other participating employers.
Cost Method	The Aggregate Cost Method is used to determine the normal cost for retirement, termination, and ancillary benefits. Under this cost method, the total of the present value of all future benefits for all participants reduced by the actuarial value of assets is divided by the present value of future compensation to determine the Normal Cost Rate. The present value of future benefits is determined by discounting, to the valuation date, the total future benefit cash flows from the plan to all of the current participants, using the actuarial assumptions. The actuarial value of assets is adjusted for certain funding standard account balances or by included-but-not-deducted contributions less deducted-but-not-included contributions. The present value of future compensation is determined by discounting, to the valuation date, all of the pensionable compensation anticipated to be paid to the current participants, using the actuarial assumptions. The Normal Cost Rate is then multiplied by the pensionable compensation for participants under retirement age to arrive at the Normal Cost payable on the valuation date. The final Normal Cost, after increasing this result for expected administrative expenses, if applicable, may not be less than zero. For this purpose, “retirement age” means the earliest age at which probability of retirement is 100%.
Asset Method	The actuarial value of assets is equal to the market value of assets except that the difference between total investment return and expected return (based on the valuation interest rate) is recognized at the rate of 20% per year. The resulting value is limited to a range of 80% to 120% of market value.
PPA Actuarial Value of Assets Method	The PPA actuarial value of assets is the average of the fair market value of assets on the valuation date and the two immediately preceding valuation dates, adjusted for contributions, benefits, administrative expenses and expected earnings (with such expected earnings limited as described in IRS Notice 2009-22). The average asset value must be within 10% of market value, including discounted contributions receivable (discounted using the effective interest rate for the prior plan year).
Participant Data	National Telecommunications Cooperative Association provided employee data as of the valuation date. Data for other participants was provided by National Telecommunications Cooperative Association. We have relied on all the data and information provided, including plan provisions and asset information, as being complete and accurate. We have not independently verified the accuracy or completeness of the data or information provided, but we have performed limited checks for reasonableness. Asset data was provided by the National Telecommunications Cooperative Association.

Schedule SB, Part V

Tax Policy	The actuarial valuation performed for the plan year ending December 31, 2018 is used to determine the maximum deductible contribution for the tax year ending December 31, 2018.
Benefits Not Included in Valuation	We believe all significant Plan provisions are reflected in this valuation.
Changes in Assumptions and Methods Since Last Actuarial Valuation	The PPA segment interest rates were updated from the September 2016 rates of 4.16%, 5.72% and 6.48% to the September 2017 rates of 3.92%, 5.52% and 6.29%. The RPA '94 Current Liability interest rate was changed from 6.48% to 6.29%. The PBGC interest rates were updated from the January 2017 rates of 2.04%, 4.03% and 4.82% to the January 2018 rates of 2.33%, 3.55% and 4.11% The RPA '94 Current Liability and Funding Target liability annuitant mortality tables were updated to reflect an additional year of mortality improvements. The valuation mortality table and lump sum mortality table for distributions after 2018 were updated to reflect the Society of Actuaries' RP-2017 mortality table projected generationally with Scale MP-2017. The lump sum mortality assumption for RPA '94 Current Liability and Funding Target liability was changed from the 2017 table to the 2018 table, as specified in Internal Revenue Code section 417(e). The lump sum interest rate assumption for distributions assumed to occur during 2018 was changed from 4.00%, 5.50% and 6.50% to 1.93%, 3.57% and 4.36% (the actual rates that apply for distributions during 2018), the 1st, 2nd and 3rd segment rates, respectively. The lump sum interest rate assumption for distributions assumed to occur after 2018 was changed from 4.00%, 5.50% and 6.50% to 4.00%, 5.50% and 6.25%, the 1st, 2nd and 3rd segment rates, respectively. The expected administrative expense assumption was changed from $14,726,715 to $14,726,009. The method for determining this assumption did not change.
Source of Data and Other Information	The plan sponsor furnished participant data as of 1/1/2018. Information on assets, contributions and plan provisions was supplied by the plan sponsor. Data and other information were reviewed for reasonableness and consistency, but no audit was performed. Based on discussions with the plan sponsor, assumptions or estimates were made when data were not available, and the data was adjusted to reflect any significant events that occurred between the date the data was collected and the measurement date. We are not aware of any errors or omissions in the data that would have a significant effect on the results of our calculations.

Schedule SB, Line 22 –
Description of Weighted Average Retirement Age
as of January 1, 2018

See Schedule SB, Part V Attachment for retirement rates. The average retirement age for Line 22 was calculated by determining the average age at retirement for those current active participants expected to reach retirement, based on all current decrements assumed.

Plan Name:	R & S Program for Employees of NTCA and Its Members
EIN / PN:	52-0741336/333
Plan Sponsor:	National Telecommunications Cooperative Association

2018 Schedule SB, line 27 –
Actuarial Information for CSEC Plans

Plan Name:	R & S Program for Employees of NTCA and Its Members
EIN / PN:	52-0741336/333
Plan Sponsor:	National Telecommunications Cooperative Association

SCHEDULE B
(Form 5500)

Department of the Treasury
Internal Revenue Service
Department of Labor
Employee Benefits Security Administration
Pension Benefit Guaranty Corporation

Actuarial Information

This schedule is required to be filed under Section 104 of the Employee Retirement Income Security Act of 1974, referred to as ERISA, except when attached to Form 5500-EZ and, in all cases, under section 6059(a) of the Internal Revenue Code, referred to as the Code.

► **Attach to Form 5500 or 5500-EZ if applicable.**
► **See separate instructions.**

Official Use Only

OMB No. 1210-0110

2007

This Form is Open to Public Inspection (except when attached to Form 5500-EZ).

For calendar plan year 2007 or fiscal plan year beginning 01/01/2018, and ending 12/31/2018,

► **Round off amounts to nearest dollar.**

► **Caution:** A penalty of $1,000 will be assessed for late filing of this report unless reasonable cause is established.

A Name of plan R&S PROGRAM FOR EMPLOYEES OF NTCA AND ITS MEMBERS	**B** Three-digit plan number ... ► 333
C Plan sponsor's name as shown on line 2a of Form 5500 or 5500-EZ. NATIONAL TELECOMMUNICATIONS COOPERATIVE ASSN.	**D** Employer Identification Number 52-0741336
E Type of plan: (1) ☐ Multiemployer (2) ☐ Single-employer (3) ☒ Multiple-employer	**F** ☐ 100 or fewer participants in prior plan year

Part I Basic Information (To be completed by all plans)

1a Enter the actuarial valuation date: Month 1 Day 1 Year 2,018

b Assets:		
(1) Current value of assets	b(1)	2,236,021,666
(2) Actuarial value of assets for funding standard account	b(2)	2,115,409,325
c (1) Accrued liability for plans using immediate gain methods	c(1)	
(2) Information for plans using spread gain methods:		
(a) Unfunded liability for methods with bases	c(2)(a)	
(b) Accrued liability under entry age normal method	c(2)(b)	2,591,355,768
(c) Normal cost under entry age normal method	c(2)(c)	79,866,733

Statement by Enrolled Actuary (see instructions before signing):

To the best of my knowledge, the information supplied in this schedule and on the accompanying schedules, statements, and attachments, if any, is complete and accurate, and in my opinion each assumption, used in combination, represents my best estimate of anticipated experience under the plan. Furthermore, in the case of a plan other than a multiemployer plan, each assumption used (a) is reasonable (taking into account the experience of the plan and reasonable expectations) or (b) would, in the aggregate, result in a total contribution equivalent to that which would be determined if each such assumption were reasonable; in the case of a multiemployer plan, the assumptions used, in the aggregate, are reasonable (taking into account the experience of the plan and reasonable expectations).

SIGN HERE ME Gibbon — **Signature of actuary**

10/3/19 — Date

Mary E Gibbon — Type or print name of actuary

G 1706921 — Most recent enrollment number

Willis Towers Watson US LLC — Firm name

(703) 258-8000 — Telephone number (including area code)

800 N. GLEBE ROAD, ARLINGTON VA, 22203 — Address of the firm

If the actuary has not fully reflected any regulation or ruling promulgated under the statute in completing this schedule, check the box and see instructions ☐

0 8 0 7 3 5 0 1 0 0

Official Use Only

1d Information on current liabilities of the plan:

(1) Amount excluded from current liability attributable to pre-participation service (see instructions)	d(1)	0
(2) "RPA '94" information:		
(a) Current liability	d(2)(a)	2,079,979,238
(b) Expected increase in current liability due to benefits accruing during the plan year	d(2)(b)	99,821,660
(c) Current liability computed at highest allowable interest rate (see instructions)	d(2)(c)	2,079,979,238
(d) Expected release from "RPA '94" current liability for the plan year	d(2)(d)	
(3) Expected plan disbursements for the plan year	d(3)	176,122,510

2 Operational information as of beginning of this plan year:

a Current value of the assets (see instructions)	2a	2,236,021,666

b "RPA '94" current liability:

	(1) No. of Persons	(2) Vested Benefits	(3) Total Benefits
(1) For retired participants and beneficiaries receiving payments	2421	635,882,229	635,882,229
(2) For terminated vested participants	2234	58,625,273	58,625,273
(3) For active participants	12092	1,177,656,618	1,385,471,736
(4) Total	16747	1,872,164,120	2,079,979,238

c If the percentage resuting from dividing line 2a by line 2b(4), column (3) is less than 70%, enter such percentage | 2c | %

3 Contributions made to the plan for the plan year by employer(s) and employees:

(a) Month-Day-Year	(b) Amount paid by employer	(c) Amount paid by employees	(a) Month-Day-Year	(b) Amount paid by employer	(c) Amount paid by employees
	109,013,848	19,339,718			
		3 Totals ► (b)	109,013,848	(c)	19339718.00

4 Quarterly contributions and liquidity shortfall(s):

a Plans other than multiemployer plans, enter funded current liability percentage for preceding year (see instructions) | 4a | 105.66 %

b If line 4a is less than 100%, see instructions, and complete the following table as applicable:

Liquidity shortfall as of end of Quarter of this plan year			
(1) 1st	(2) 2nd	(3) 3rd	(4) 4th

Official Use Only

5 Actuarial cost method used as the basis for this plan year's funding standard account computation:

a ☐ Attained age normal **b** ☐ Entry age normal **c** ☐ Accrued benefit (unit credit)

d ☒ Aggregate **e** ☐ Frozen initial liability **f** ☐ Individual level premium

g ☐ Individual aggregate **h** ☐ Other (specify) ▶

i Has a change been made in funding method for this plan year? ☐ Yes ☒ No

j If line i is "Yes," was the change made pursuant to Revenue Procedure 2000-40? ☐ Yes ☐ No

k If line i is "Yes," and line j is "No" enter the date of the ruling letter (individual or class) approving the change in funding method Month Day Year

6 Checklist of certain actuarial assumptions:

a Interest rates for "RPA '94" current liability		**6a**	6.29 %	☐ N/A
b Weighted average retirement age		**6b**		☐ N/A
		Pre-retirement	Post-retirement	
c Rates specified in insurance or annuity contracts ☐ N/A	**6c**	☐ Yes ☒ No	☐ Yes ☒ No	☐ N/A
d Mortality table code for valuation purposes:				
(1) Males	**d(1)**	A	A	
(2) Females	**d(2)**	A	A	
e Valuation liability interest rate ☐ N/A	**6e**	7.00 %	7.00 %	☐ N/A
f Expense loading ☐ N/A	**6f**	9.30 %	%	☒ N/A
		Male	Female	
g Annual withdrawal rates:		Rate Code	Rate Code	
(1) Age 25	**g(1)**	S 16.00 %	S 16.00 %	
(2) Age 40	**g(2)**	S 16.00 %	S 16.00 %	
(3) Age 55	**g(3)**	S 16.00 %	S 16.00 %	
h Salary scale ☐ N/A	**6h**	4.29 %	4.29 %	☐ N/A
i Estimated investment return on actuarial value of assets for year ending on the valuation date	**6i**		9.34 %	
j Estimated investment return on current value of assets for year ending on the valuation date	**6j**		15.36 %	

7 New amortization bases established in the current plan year:

(1) Type of Base	(2) Initial Balance	(3) Amortization Charge/Credit

8 Miscellaneous information:

a If a waiver of a funding deficiency or an extension of an amortization period has been approved for this plan year, enter the date of the ruling letter granting the approval Month Day Year

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8b If one or more alternative methods or rules (as listed in the instructions) were used for this plan year, enter the appropriate code in accodance with the instructions ►

c Is the plan required to provide a Schedule of Active Participant Data? (see instructions) If "Yes," attach schedule ☑ Yes ☐ No

9	Funding standard account statement for this plan year:			
	Charges to funding standard account:			
a	Prior year funding deficiency, if any		**9a**	0
b	Employer's normal cost for plan year as of valuation date		**9b**	157,602,613
c	Amortization charges as of valuation date:	Outstanding Balance		
	(1) All bases except funding waivers	► ($ 0)	**c(1)**	0
	(2) Funding waivers	► ($ 0)	**c(2)**	0
d	Interest as applicable on lines 9a, 9b, and 9c		**9d**	11,032,183
e	Additional interest charge due to late quarterly contributions, if applicable		**9e**	
f	Adjusted additional funding charge from Part II, line 12q, if applicable ☐ N/A		**9f**	0
g	Total charges. Add lines 9a through 9f		**9g**	168,634,796
	Credits to funding standard account:			
h	Prior year credit balance, if any		**9h**	252,368,663
i	Employer contributions. Total from column (b) of line 3		**9i**	109,013,848
		Outstanding Balance		
j	Amortization credits as of valuation date	► ($)	**9j**	0
k	Interest as applicable to end of plan year on lines 9h, 9i, and 9j		**9k**	17,667,502
l	Full funding limitation (FFL) and credits			
	(1) ERISA FFL (accrued liability FFL)	**l(1)** 864,754,567		
	(2) "RPA '94" override (90% current liability FFL)	**l(2)**		
	(3) FFL credit		**l(3)**	0
m	(1) Waived funding deficiency		**m(1)**	
	(2) Other credits		**m(2)**	
n	Total credits. Add lines 9h through 9k, 9l(3), 9m(1), and 9m(2)		**9n**	379,050,013
o	Credit balance: If line 9n is greater than line 9g, enter the difference		**9o**	210,415,217
p	Funding deficiency: If line 9g is greater than line 9n, enter the difference		**9p**	0
	Reconciliation account:			
q	Current year's accumulated reconciliation account:			
	(1) Due to additional funding charges as of the beginning of the plan year	**q(1)**		
	(2) Due to additional interest charges as of the beginning of the plan year	**q(2)**		
	(3) Due to waived funding deficiencies:			
	(a) Reconciliation outstanding balance as of valuation date	**q(3)(a)**		
	(b) Reconciliation amount. Line 9c(2) balance minus line 9q(3)(a)	**q(3)(b)** 0		
	(4) Total as of valuation date ►		**q(4)**	0
10	Contribution necessary to avoid an accumulated funding deficiency. Enter the amount in line 9p or the amount required under the alternative funding standard account if applicable		**10**	0

11 Has a change been made in the actuarial assumptions for the current plan year? If "Yes," see instructions ☒ Yes ☐ No

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Part II Additional Information for Certain Plans Other Than Multiemployer Plans

Please see **Who Must File** in the Schedule B instructions to determine if you must complete Part II.

12 Additional required funding charge (see instructions):

a Enter "Gateway %." Divide line 1b(2) by line 1d(2)(c) and multiply by 100.
If line 12a is at least 90%, go to line 12q and enter -0-.
If line 12a is less than 80%, go to line 12b.
If line 12a is at least 80% (but less than 90%), see instructions and, if applicable, go to line 12q and enter -0-. Otherwise, go to line 12b ..... **12a** 101.70 %

b "RPA '94" current liability. Enter line 1d(2)(a) **12b**

c Adjusted value of assets (see instructions) **12c**

d Funded current liability percentage. Divide line 12c by 12b and multiply by 100 ..... **12d** %

e Unfunded current liability. Subtract line 12c from line 12b **12e**

f Liability attrubutable to any unpredicable contingent event benefit **12f**

g Outstanding balance of unfunded old liability **12g**

h Unfunded new liability. Subtract the total of lines 12f and 12g from line 12e. Enter -0- if negative **12h** 0

i Unfunded new liability amount (_____ % of line 12h) **12i** 0

j Unfunded old liability amount **12j**

k Deficit reduction contribution. Add lines 12i, 12j and 1d(2)(b) **12k** 0

l Net charges in funding standard account used to offset the deficit reduction contribution. Enter a negative number if less than zero **12l** 0

m Unpredictable contingent event amount:

(1)	Benefits paid during year attributable to unpredictable contingent event ...	m(1)	
(2)	Unfunded current liability percentage. Subtract the percentage on line 12d from 100%	m(2)	%
(3)	Enter the product of lines 12m(1) and 12m(2)	m(3)	0
(4)	Ammortization of all unpredictable contingent event liabilities	m(4)	
(5)	"RPA '94" additional amount (see instructions)	m(5)	0

(6) Enter the greatest of lines 12m(3), 12m(4), or 12m(5) ..... **m(6)** 0

n Preliminary additional funding charge: Enter the excess of line 12k over line 12l (if any), plus line 12m(6), adjusted to end of year with interest **12n** 0

o Contributions needed to increase current liability percentage to 100% (see instructions) **12o**

p Additional funding charge prior to adjustment: Enter the lesser of line 12n or 12o **12p** 0

q Adjusted additional funding charge. (.0% of line 12p) **12q** 0

APPENDIX A - SCHEDULE B ATTACHMENTS

Statement of Actuarial Assumptions and Methods – Schedule B Line 6

Plan Sponsor National Telecommunications Cooperative Association

EIN/PN 52-0741336/333

Interest Rates

Valuation 7.00% (unchanged from 7.00% last year)

RPA'94 Current liability 6.29% (changed from 6.48% last year)

PPA Funding Target

	Segment 1	Segment 2	Segment 3
Current Year	3.92%	5.52%	6.29%
Prior Year	4.16%	5.72%	6.48%

PBGC Premium Funding Target

	Segment 1	Segment 2	Segment 3
Current Year	2.33%	3.55%	4.11%
Prior Year	2.04%	4.03%	4.82%

Lump Sums Actual 3-segment yield curve for distributions assumed to occur in valuation year and assumed 3-segment yield curve for distributions assumed to occur in future years, based on following schedule:

Year	Segment 1	Segment 2	Segment 3
2018	1.93%	3.57%	4.36%
2019+	4.00%	5.50%	6.25%

In the prior year, the 1st, 2nd, and 3rd segment interest rates for distributions during 2018 and later were 4.00%, 5.50%, and 6.50%, respectively.

Covered Pay

Assumed Plan compensation for the year beginning on the valuation date was determined as the base rate of pay on the valuation date.

Compensation Increases

The annual rate of a participant's salary increase was assumed to be based on the participant's age. The following shows the assumed rates of increase at illustrative ages:

Age	Rate
25	7.60%
30	5.90%
35	5.20%
40	4.70%
45	3.80%
50	3.30%
55	3.10%
60	3.00%
65	3.00%

APPENDIX A - SCHEDULE B ATTACHMENTS (cont.)

Future Increases in Maximum Benefits, Social Security Wage Base, and Plan Compensation Limitations	Projected benefits are limited to the maximum presently allowed under IRC Section 415. Plan compensation is limited to the maximum presently allowed under IRC Section 401(a)(17). No provision is made for future increases in the maximum annual benefit, Social Security Wage Base, or compensation limit.
Assumed Cost-of-Living Adjustments	2.50%
Administrative Expenses	The amount included this year for Administrative Expenses is $14,726,009. This amount is estimated by assuming last year's administrative expenses, increased by 2.5%, plus actual PBGC premiums for the year.
Mortality (other than for lump sum distribution)	• For RPA '94 Current Liability and Funding Target: Male and Female 2018 PPA Static Mortality for Non-Annuitants is used for participants in the valuation before they begin receiving payment. Male and Female 2018 PPA Static Mortality for Annuitants is used for participants currently in payment and once participants not in payment status move to in payment status. • For ASC960: Male and Female Society of Actuaries' RP-2018 Employees mortality table generationally projected with Scale MP-2018 for participants before they begin receiving payment. Male and Female Society of Actuaries' RP-2018 for Healthy Annuitants mortality table generationally projected with Scale MP-2018 for participants currently in payment and once participants not in payment status move to in payment status. • For all other purposes: Separate rates for disabled participants (based on RP-2017 "Disabled Retiree" table), non-annuitants (based on RP-2017 "Employees" table) and annuitants (based on RP-2017 "Healthy Annuitants" table), all generationally projected using Scale MP-2017. • Last year for RPA '94 Current Liability and Funding Target: Male and Female 2017 PPA Static Mortality for Non-Annuitants was used for participants in the valuation before they begin receiving payment. Male and Female 2017 PPA Static Mortality for Annuitants was used for participants currently in payment and once participants not in payment status move to in payment status. • Last Year for ASC960: Male and Female Society of Actuaries' RP-2017 Employees mortality table generationally projected with Scale MP-2017 for participants before they begin receiving payment. Male and Female Society of Actuaries' RP-2017 for Healthy Annuitants mortality table generationally projected with Scale MP-2017 for participants currently in payment and once participants not in payment status move to in payment status. • Last Year for all other purposes: Separate rates for disabled participants (based on RP-2016 "Disabled Retiree" table), non-annuitants (based on RP-2016 "Employees" table) and annuitants (based on RP-2016 "Healthy Annuitants" table), all generationally projected using Scale MP-2016

APPENDIX A - SCHEDULE B ATTACHMENTS (cont.)

Mortality for lump sum distributions

- For RPA '94 Current Liability and Funding Target: the 2018 mortality table specified in Internal Revenue Code section 417(e). In prior year, the 2017 mortality table specified in Internal Revenue Code section 417(e).
- For all other purposes: The 2018 mortality table specified in Internal Revenue Code section 417 (e) is used for lump sum distributions in 2018. The Society of Actuaries' RP-2017 mortality table generationally projected with Scale MP-2017 for lump sum distributions after 2018. In the prior year, the 2017 mortality table specified in Internal Revenue Code section 417 (e) was used for distributions in 2017 and the Society of Actuaries' RP-2016 mortality table generationally projected with Scale MP-2016 for lump sum distributions after 2017.

Retirement

The following rates of retirement were used:

Retirement Rates for Non-ROE Eligible participants:

Age	Rate
55-59	4.0%
60	7.0%
61	10.0%
62-63	15.0%
64	20.0%
65	40.0%
66-69	25.0%
70	100.0%

Retirement Rates for ROE Eligible participants under age 65 with 85 points:

Age	Rate
55-59	15.0%
60-64	20.0%
65	40.0%
66-69	25.0%
70	100.0%

Retirement Rates for ROE Eligible participants under age 65 without 85 points:

Age	Rate
55-59	2.0%
60-61	7.0%
62-63	15.0%
64	20.0%
65	40.0%
66-69	25.0%
70	100.0%

APPENDIX A - SCHEDULE B ATTACHMENTS (cont.)

Representative Termination Rates not due to disability, retirement or mortality

Representative termination rates if service less than 5 years:

Service	Rate
0	16.0%
1	13.0%
2	10.0%
3	9.0%
4	7.0%

Representative termination rates if service is greater than or equal to 5 years:

Service	Rate
20	6.6%
25	6.6%
30	3.6%
35	3.8%
40	3.1%
45	2.8%
50	2.6%
55	0.0%
60 and over	0.0%

Disability Rates

None.

Form of Payment

65% of retirements are assumed to elect a lump sum at termination or retirement. Of the remaining 35%, 30% are assumed to elect a ten-year certain annuity and 70% are assumed to elect a 75% joint and survivor annuity. Vested participants with termination dates in the year prior to the valuation are assumed to elect a lump sum. Terminated vested participants who are eligible for Rule of 85 and will reach 85 points before age 65 are assumed to elect a lump sum in the year they reach 85 points. All other terminated vested participants are assumed to elect a life annuity with payments guaranteed for 10 years commencing at age 65.

Marriage

Of all active participants, 85% are assumed to be married.

Spouse Age

Wife 3 years younger than husband.

Inclusion Date

The valuation date coincident with or next following the date on which the employee becomes a participant.

Employees

It is assumed that there will be no new or rehired employees.

APPENDIX A - SCHEDULE B ATTACHMENTS (cont.)

Employees at Withdrawn Employers	Active employees at withdrawn employers are assumed to commence benefits at the same rates as active employees at other participating employers.
Cost Method	The Aggregate Cost Method is used to determine the normal cost for retirement, termination, and ancillary benefits. Under this cost method, the total of the present value of all future benefits for all participants reduced by the actuarial value of assets is divided by the present value of future compensation to determine the Normal Cost Rate. The present value of future benefits is determined by discounting, to the valuation date, the total future benefit cash flows from the plan to all of the current participants, using the actuarial assumptions. The actuarial value of assets is adjusted for certain funding standard account balances or by included-but-not-deducted contributions less deducted-but-not-included contributions. The present value of future compensation is determined by discounting, to the valuation date, all of the pensionable compensation anticipated to be paid to the current participants, using the actuarial assumptions. The Normal Cost Rate is then multiplied by the pensionable compensation for participants under retirement age to arrive at the Normal Cost payable on the valuation date. The final Normal Cost, after increasing this result for expected administrative expenses, if applicable, may not be less than zero. For this purpose, “retirement age” means the earliest age at which probability of retirement is 100%.
Asset Method	The actuarial value of assets is equal to the market value of assets except that the difference between total investment return and expected return (based on the valuation interest rate) is recognized at the rate of 20% per year. The resulting value is limited to a range of 80% to 120% of market value.
PPA Actuarial Value of Assets Method	The PPA actuarial value of assets is the average of the fair market value of assets on the valuation date and the two immediately preceding valuation dates, adjusted for contributions, benefits, administrative expenses and expected earnings (with such expected earnings limited as described in IRS Notice 2009-22). The average asset value must be within 10% of market value, including discounted contributions receivable (discounted using the effective interest rate for the prior plan year).
Participant Data	National Telecommunications Cooperative Association provided employee data as of the valuation date. Data for other participants was provided by National Telecommunications Cooperative Association. We have relied on all the data and information provided, including plan provisions and asset information, as being complete and accurate. We have not independently verified the accuracy or completeness of the data or information provided, but we have performed limited checks for reasonableness. Asset data was provided by the National Telecommunications Cooperative Association.
Tax Policy	The actuarial valuation performed for the plan year ending December 31, 2018 is used to determine the maximum deductible contribution for the tax year ending December 31, 2018.

APPENDIX A - SCHEDULE B ATTACHMENTS (cont.)

Benefits Not Included in Valuation	We believe all significant Plan provisions are reflected in this valuation.
Changes in Assumptions and Methods Since Last Actuarial Valuation	The PPA segment interest rates were updated from the September 2016 rates of 4.16%, 5.72% and 6.48% to the September 2017 rates of 3.92%, 5.52% and 6.29%. The RPA '94 Current Liability interest rate was changed from 6.48% to 6.29%. The PBGC interest rates were updated from the January 2017 rates of 2.04%, 4.03% and 4.82% to the January 2018 rates of 2.33%, 3.55% and 4.11% The RPA '94 Current Liability and Funding Target liability annuitant mortality tables were updated to reflect an additional year of mortality improvements. The valuation mortality table and lump sum mortality table for distributions after 2018 were updated to reflect the Society of Actuaries' RP-2017 mortality table projected generationally with Scale MP-2017. The lump sum mortality assumption for RPA '94 Current Liability and Funding Target liability was changed from the 2017 table to the 2018 table, as specified in Internal Revenue Code section 417(e). The lump sum interest rate assumption for distributions assumed to occur during 2018 was changed from 4.00%, 5.50% and 6.50% to 1.93%, 3.57% and 4.36% (the actual rates that apply for distributions during 2018), the 1st, 2nd and 3rd segment rates, respectively. The lump sum interest rate assumption for distributions assumed to occur after 2018 was changed from 4.00%, 5.50% and 6.50% to 4.00%, 5.50% and 6.25%, the 1st, 2nd and 3rd segment rates, respectively. The expected administrative expense assumption was changed from $14,726,715 to $14,726,009. The method for determining this assumption did not change.
Source of Data and Other Information	The plan sponsor furnished participant data as of 1/1/2018. Information on assets, contributions and plan provisions was supplied by the plan sponsor. Data and other information were reviewed for reasonableness and consistency, but no audit was performed. Based on discussions with the plan sponsor, assumptions or estimates were made when data were not available, and the data was adjusted to reflect any significant events that occurred between the date the data was collected and the measurement date. We are not aware of any errors or omissions in the data that would have a significant effect on the results of our calculations.

APPENDIX B - SCHEDULE B ATTACHMENTS (cont.)

Summary of Principal Plan Provisions – Schedule B Lines 6

Effective Date:

As amended through January 1, 2018.

Eligibility Requirements:

Any one of the following, depending upon system election:

i. Date of employment
ii. Completion of three months of service
iii. Completion of six months of service
iv. Completion of one year of service
v. Completion of two years of service
vi. Attainment of age 21
vii. Attainment of age 21 and completion of three months of service
viii. Attainment of age 21 and completion of six months of service
ix. Attainment of age 21 and completion of one year of service
x. Attainment of age 21 and completion of two years of service.

Retirement Dates:

a. Normal - The first of the month containing the 65th birthday.

b. Early - The first of any month coincident with or following the month containing the 55th birthday.

Retirement Benefits:

a. Normal - The benefit is based on the final average earnings. The benefit is equal to the final average earnings multiplied by the product of:

i. 0.2168 for all earnings prior to January 1, 2008, and 0.2091 for all earnings on or after January 1, 2008 but prior to January 1, 2014, and 0.1855 for all earnings on or after January 1, 2014, and 0.1531 for all earnings on or after January 1, 2017 multiplied by
ii. The sum of accumulated system and participant net contribution percents.

b. Early - The benefit amount is the accrued benefit determined as in 4.a. based on past service and salaries at the date of early retirement, subject to the following:

i. The full accrued benefit is payable if the employee is eligible to retire under the Rule-of-85. Only employees of systems which have adopted this provision may become eligible.

ii. If not, the benefit in 4.a.i. is reduced 1/4% for each month by which the member's 60th birthday, or Early Retirement Date, if later, precedes his Normal Retirement Date, plus 1/2% for each of the next 60 months by which the payment commencement date precedes age 60.

c. Late - Accrued benefit of 4.a. above, based on credited service and final average earnings at the date of late retirement, increased 1/4% for each month by which the member's Late Retirement Date follows his Normal Retirement Date.

APPENDIX B - SCHEDULE B ATTACHMENTS (cont.)

Termination Benefits:

The accrued benefit of 4.a. above based on credited service at date of termination. An actuarially equivalent benefit is payable at any time.

Death Benefits:

An amount equal to the greater of:

i. 100 times the monthly pension that would have been payable had the participant survived until his Normal Retirement Date and retired with benefits payable in the form of a single life annuity with payments guaranteed for ten years.

ii. The present value of the participant's Accrued Retirement Benefit.

Employee Contributions:

Employees may be required to contribute to the Plan as a condition of participation. The amount of the contribution is equal to a designated percentage of earnings. Interest is credited on all employee contributions.

Form of Benefit Payment:

For married participants, an actuarially equivalent 50% Joint and Survivor Benefit is the normal form of benefit.

For all others, the normal form of benefit is a life annuity with payments guaranteed for ten years.

Optional forms of payment are available under the Plan to all participants.

Changes in Plan Provisions:

Various member companies made changes to their benefit levels and other adoption agreement elections, some of which may have been prospective only.

APPENDIX B - SCHEDULE B ATTACHMENTS (cont.)

Glossary

Actuarial Accrued Liability	This is computed differently under different actuarial cost methods. Generally, the actuarial accrued liability represents the portion of the cost of the participants' anticipated retirement, termination and/or death and disability benefits allocated to the years before the current plan year.
Actuarial Gain or Loss	From one plan year to the next, if the experience of the plan differs from that anticipated using the actuarial assumptions, an actuarial gain or loss occurs. For example, an actuarial gain would occur if the assets in the trust earned 12% for the year while the assumed rate of return used in the valuation was 7.75%.
Current Liability	This is computed the same as the Present Value of Accumulated Benefits, but using interest rate and mortality assumptions specified by the IRS. This quantity is used in the calculation of the plan's funded percentage, to determine whether the plan sponsor will be allowed to make a tax-deductible contribution to the plan for the year, to determine whether quarterly contribution deposits are required, to determine whether the plan is exempt from the deficit reduction contribution and, if not, to determine the amount of the additional funding charge.
Funding Target	Present value of benefits accrued under the plan as of the beginning of the plan year, determined under ongoing or "not-at-risk" assumptions specified in Internal Revenue Code Section 430.
Normal Cost	Computed differently under different actuarial cost methods, the normal cost generally represents the portion of the cost of the participants' anticipated retirement, termination, death and disability benefits allocated to the current plan year. Employer Normal Cost also includes the cost of anticipated administrative expenses and is reduced by anticipated employee contributions and so is sometimes called Net Total Employer Normal Cost.
Present Value of Accumulated Benefits	Computed in accordance with ASC 960, this quantity is determined independently from the plan's actuarial cost method. This is the present value of a participant's accrued benefit as of the valuation date, assuming the participant will earn no more credited service and will receive no future salary.
Present Value of Future Benefits	This is computed by projecting the total future benefit cash flow from the plan, using actuarial assumptions, and then discounting the cash flow to the valuation date.
Present Value of Vested Benefits	This is the portion of the Present Value of Accumulated Benefits in which the employee would have a vested interest if the employee were to separate from service with the employer on the valuation date.

APPENDIX C - SCHEDULE B ATTACHMENTS

Schedule B, Line 3 -
Schedule of Plan Year Contributions

Contribution Date	Employer Contribution	Employee Contribution
January 15, 2018	-	2,318,064
February 15, 2018	-	2,320,940
March 15, 2018	-	2,984,277
April 15, 2018	-	2,339,255
May 15, 2018	-	2,341,604
June 15, 2018	-	2,332,652
July 15, 2018	-	2,352,397
August 15, 2018	-	2,338,720
September 15, 2018	84,646	11,809
October 15, 2018	-	-
November 15, 2018	-	-
December 15, 2018	-	-
January 15, 2019	16,670,228	-
February 15, 2019	12,363,747	-
March 15, 2019	16,164,750	-
April 15, 2019	12,860,316	-
May 15, 2019	12,731,562	-
June 15, 2019	12,645,991	-
July 15, 2019	12,623,008	-
August 15, 2019	12,700,773	
September 15, 2019	168,827	-
Total	109,013,848	19,339,718

Plan Name: R & S Program for Employees of NTCA and Its Members
EIN / PN: 52-0741336/333
Plan Sponsor: National Telecommunications Cooperative Association

APPENDIX C - SCHEDULE B ATTACHMENTS

Schedule B, Line 6b –
Description of Weighted Average Retirement Age
as of January 1, 2018

See Appendix A for retirement rates. The average retirement age for Line 6b was calculated by determining the average age at retirement for those current active participants expected to reach retirement, based on all current decrements assumed.

Plan Name:	R & S Program for Employees of NTCA and Its Members
EIN / PN:	52-0741336/333
Plan Sponsor:	National Telecommunications Cooperative Association

APPENDIX C - SCHEDULE B ATTACHMENTS (cont.)

Line 8c - Schedule of Active Participant Data as of 01/01/2018

Attachment to Schedule B (Form 5500)

Number and Average Plan Compensation Limited by IRC 401(a)(17) Distributed by Attained Age and Attained Years of Credited Service [1]

Attained Age	Attained Years of Credited Service													
	0	1	2	3	4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40 & Over	Total
Under 25	65	65	49	31	8	4								222
	$38,511	$38,470	$41,412	$48,423										$40,824
25-29	89	130	132	96	63	177	6							693
	$40,506	$43,084	$46,004	$51,247	$52,587	$54,423								$48,367
30-34	79	112	104	88	78	377	241	5						1,084
	$49,499	$47,641	$51,949	$57,744	$54,805	$58,415	$62,938							$56,718
35-39	70	89	83	76	58	352	483	309	8					1,528
	$49,616	$51,382	$54,687	$56,283	$61,485	$63,344	$66,474	$69,130						$63,277
40-44	54	69	59	49	52	283	369	533	213	6				1,687
	$51,037	$60,159	$54,935	$60,527	$60,964	$65,126	$66,592	$73,258	$77,874					$68,377
45-49	47	70	59	51	33	233	327	518	380	111	4			1,833
	$59,607	$60,837	$57,639	$67,119	$79,344	$65,787	$69,159	$72,309	$82,483	$85,358				$72,548
50-54	32	39	39	43	36	155	247	435	319	228	90	13		1,676
	$60,013	$61,651	$63,590	$63,330	$70,169	$72,960	$66,979	$70,618	$80,451	$88,534	$88,899	$73,558		$74,840
55-59	28	39	30	24	30	170	203	351	301	180	86	85	11	1,538
	$59,717	$54,982	$70,236	$79,735	$80,784	$73,046	$64,684	$68,438	$75,149	$83,407	$103,006	$100,284	$88,023	$75,302
60-64	12	20	24	13	19	118	117	182	173	70	32	49	37	866
	$62,978	$60,628	$60,918	$46,643	$77,847	$70,230	$63,048	$66,296	$72,241	$84,652	$84,891	$98,283	$102,407	$72,737
65-69	2	1	4	1	5	28	34	34	34	15	5	8	17	188
						$77,646	$65,314	$71,507	$69,918	$85,284			$89,064	$75,332
70&Over	1	4			1	4	5	7	4	2			2	30
														$77,921
Total	479	638	583	472	383	1901	2032	2374	1432	612	217	155	67	11,345
	$49,202	$50,923	$53,110	$58,208	$63,463	$64,377	$66,136	$70,790	$78,118	$86,003	$93,485	$96,831	$95,550	$67,856

[1]There are 747 withdrawn employees not represented on this distribution, for a total of 12,092 active participants.

Plan Name: R & S Program for Employees of NTCA and Its Members
EIN / PN: 52-0741336/333
Plan Sponsor: National Telecommunications Cooperative Association

APPENDIX C - SCHEDULE B ATTACHMENTS (cont.)

Schedule B, Line 11 –
Justification for Change in Actuarial Assumptions
as of January 1, 2018

The RPA ’94 Current Liability interest rate was changed from 6.48% to 6.29%.

The RPA ‘94 Current Liability and Funding Target liability annuitant mortality tables were updated to reflect an additional year of mortality improvements.

The PPA segment interest rates were updated from the September 2016 rates of 4.16%, 5.72% and 6.48% to the September 2017 rates of 3.92%, 5.52% and 6.29%.

The PBGC interest rates were updated from the January 2017 rates of 2.04%, 4.03% and 4.82% to the January 2018 rates of 2.33%, 3.55% and 4.11%

The valuation mortality table and lump sum mortality table for distributions after 2018 were updated to reflect the Society of Actuaries’ RP-2017 mortality table projected generationally with Scale MP-2017.

The lump sum mortality assumption for RPA ‘94 Current Liability and Funding Target liability was changed from the 2017 table to the 2018 table, as specified in Internal Revenue Code section 417(e).

The lump sum interest rate assumption for distributions assumed to occur during 2018 was changed from 4.00%, 5.50% and 6.50% to 1.93%, 3.57% and 4.36% (the actual rates that apply for distributions during 2018), the 1st, 2nd and 3rd segment rates, respectively.

The lump sum interest rate assumption for distributions assumed to occur after 2018 was changed from 4.00%, 5.50% and 6.50% to 4.00%, 5.50% and 6.25%, the 1st, 2nd and 3rd segment rates, respectively.

The expected administrative expense assumption was changed from $14,726,715 to $14,726,009. The method for determining this assumption did not change.

2018 Schedule SB, line 27 –
Actuarial Information for CSEC Plans

Plan Name:	R & S Program for Employees of NTCA and Its Members
EIN / PN:	52-0741336/333
Plan Sponsor:	National Telecommunications Cooperative Association

SCHEDULE B
(Form 5500)

Department of the Treasury
Internal Revenue Service
Department of Labor
Employee Benefits Security Administration
Pension Benefit Guaranty Corporation

Actuarial Information

This schedule is required to be filed under Section 104 of the Employee Retirement Income Security Act of 1974, referred to as ERISA, except when attached to Form 5500-EZ and, in all cases, under section 6059(a) of the Internal Revenue Code, referred to as the Code.

► **Attach to Form 5500 or 5500-EZ if applicable.**
► **See separate instructions.**

Official Use Only

OMB No. 1210-0110

2007

This Form is Open to Public Inspection (except when attached to Form 5500-EZ).

For calendar plan year 2007 or fiscal plan year beginning 01/01/2018, and ending 12/31/2018,

► **Round off amounts to nearest dollar.**

► **Caution:** A penalty of $1,000 will be assessed for late filing of this report unless reasonable cause is established.

A Name of plan R&S PROGRAM FOR EMPLOYEES OF NTCA AND ITS MEMBERS	**B** Three-digit plan number ... ► 333
C Plan sponsor's name as shown on line 2a of Form 5500 or 5500-EZ. NATIONAL TELECOMMUNICATIONS COOPERATIVE ASSN.	**D** Employer Identification Number 52-0741336
E Type of plan: (1) ☐ Multiemployer (2) ☐ Single-employer (3) ☒ Multiple-employer	**F** ☐ 100 or fewer participants in prior plan year

Part I Basic Information (To be completed by all plans)

1a Enter the actuarial valuation date: Month 1 Day 1 Year 2,018

b Assets:		
(1) Current value of assets	b(1)	2,236,021,666
(2) Actuarial value of assets for funding standard account	b(2)	2,115,409,325
c (1) Accrued liability for plans using immediate gain methods	c(1)	
(2) Information for plans using spread gain methods:		
(a) Unfunded liability for methods with bases	c(2)(a)	
(b) Accrued liability under entry age normal method	c(2)(b)	2,591,355,768
(c) Normal cost under entry age normal method	c(2)(c)	79,866,733

Statement by Enrolled Actuary (see instructions before signing):

To the best of my knowledge, the information supplied in this schedule and on the accompanying schedules, statements, and attachments, if any, is complete and accurate, and in my opinion each assumption, used in combination, represents my best estimate of anticipated experience under the plan. Furthermore, in the case of a plan other than a multiemployer plan, each assumption used (a) is reasonable (taking into account the experience of the plan and reasonable expectations) or (b) would, in the aggregate, result in a total contribution equivalent to that which would be determined if each such assumption were reasonable; in the case of a multiemployer plan, the assumptions used, in the aggregate, are reasonable (taking into account the experience of the plan and reasonable expectations).

SIGN HERE ME Gibbon — **Signature of actuary**

10/3/19 — Date

Mary E Gibbon — Type or print name of actuary

G 1706921 — Most recent enrollment number

Willis Towers Watson US LLC — Firm name

(703) 258-8000 — Telephone number (including area code)

800 N. GLEBE ROAD, ARLINGTON VA, 22203 — Address of the firm

If the actuary has not fully reflected any regulation or ruling promulgated under the statute in completing this schedule, check the box and see instructions ☐

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1d Information on current liabilities of the plan:

(1) Amount excluded from current liability attributable to pre-participation service (see instructions)	d(1)	0
(2) "RPA '94" information:		
(a) Current liability	d(2)(a)	2,079,979,238
(b) Expected increase in current liability due to benefits accruing during the plan year	d(2)(b)	99,821,660
(c) Current liability computed at highest allowable interest rate (see instructions)	d(2)(c)	2,079,979,238
(d) Expected release from "RPA '94" current liability for the plan year	d(2)(d)	
(3) Expected plan disbursements for the plan year	d(3)	176,122,510

2 Operational information as of beginning of this plan year:

a Current value of the assets (see instructions)	2a	2,236,021,666

b "RPA '94" current liability:

	(1) No. of Persons	(2) Vested Benefits	(3) Total Benefits
(1) For retired participants and beneficiaries receiving payments	2421	635,882,229	635,882,229
(2) For terminated vested participants	2234	58,625,273	58,625,273
(3) For active participants	12092	1,177,656,618	1,385,471,736
(4) Total	16747	1,872,164,120	2,079,979,238

c If the percentage resuting from dividing line 2a by line 2b(4), column (3) is less than 70%, enter such percentage | 2c | %

3 Contributions made to the plan for the plan year by employer(s) and employees:

(a) Month-Day-Year	(b) Amount paid by employer	(c) Amount paid by employees	(a) Month-Day-Year	(b) Amount paid by employer	(c) Amount paid by employees
	109,013,848	19,339,718			
		3 Totals ► (b)	109,013,848	(c)	19339718.00

4 Quarterly contributions and liquidity shortfall(s):

a Plans other than multiemployer plans, enter funded current liability percentage for preceding year (see instructions) | 4a | 105.66 %

b If line 4a is less than 100%, see instructions, and complete the following table as applicable:

Liquidity shortfall as of end of Quarter of this plan year			
(1) 1st	(2) 2nd	(3) 3rd	(4) 4th

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5 Actuarial cost method used as the basis for this plan year's funding standard account computation:

a ☐ Attained age normal **b** ☐ Entry age normal **c** ☐ Accrued benefit (unit credit)

d ☒ Aggregate **e** ☐ Frozen initial liability **f** ☐ Individual level premium

g ☐ Individual aggregate **h** ☐ Other (specify) ▶

i Has a change been made in funding method for this plan year? ☐ Yes ☒ No

j If line i is "Yes," was the change made pursuant to Revenue Procedure 2000-40? ☐ Yes ☐ No

k If line i is "Yes," and line j is "No" enter the date of the ruling letter (individual or class) approving the change in funding method Month Day Year

6 Checklist of certain actuarial assumptions:

a Interest rates for "RPA '94" current liability		**6a**	6.29 %	☐ N/A
b Weighted average retirement age		**6b**		☐ N/A
		Pre-retirement	Post-retirement	
c Rates specified in insurance or annuity contracts ☐ N/A	**6c**	☐ Yes ☒ No	☐ Yes ☒ No	☐ N/A
d Mortality table code for valuation purposes:				
(1) Males	**d(1)**	A	A	
(2) Females	**d(2)**	A	A	
e Valuation liability interest rate ☐ N/A	**6e**	7.00 %	7.00 %	☐ N/A
f Expense loading ☐ N/A	**6f**	9.30 %	%	☒ N/A
		Male	Female	
g Annual withdrawal rates:		Rate Code	Rate Code	
(1) Age 25	**g(1)**	S 16.00 %	S 16.00 %	
(2) Age 40	**g(2)**	S 16.00 %	S 16.00 %	
(3) Age 55	**g(3)**	S 16.00 %	S 16.00 %	
h Salary scale ☐ N/A	**6h**	4.29 %	4.29 %	☐ N/A
i Estimated investment return on actuarial value of assets for year ending on the valuation date	**6i**		9.34 %	
j Estimated investment return on current value of assets for year ending on the valuation date	**6j**		15.36 %	

7 New amortization bases established in the current plan year:

(1) Type of Base	(2) Initial Balance	(3) Amortization Charge/Credit

8 Miscellaneous information:

a If a waiver of a funding deficiency or an extension of an amortization period has been approved for this plan year, enter the date of the ruling letter granting the approval Month Day Year

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8b If one or more alternative methods or rules (as listed in the instructions) were used for this plan year, enter the appropriate code in accodance with the instructions ►

c Is the plan required to provide a Schedule of Active Participant Data? (see instructions) If "Yes," attach schedule ☑ Yes ☐ No

9	Funding standard account statement for this plan year:			
	Charges to funding standard account:			
a	Prior year funding deficiency, if any		**9a**	0
b	Employer's normal cost for plan year as of valuation date		**9b**	157,602,613
c	Amortization charges as of valuation date:	Outstanding Balance		
	(1) All bases except funding waivers	► ($ 0)	**c(1)**	0
	(2) Funding waivers	► ($ 0)	**c(2)**	0
d	Interest as applicable on lines 9a, 9b, and 9c		**9d**	11,032,183
e	Additional interest charge due to late quarterly contributions, if applicable		**9e**	
f	Adjusted additional funding charge from Part II, line 12q, if applicable ☐ N/A		**9f**	0
g	Total charges. Add lines 9a through 9f		**9g**	168,634,796
	Credits to funding standard account:			
h	Prior year credit balance, if any		**9h**	252,368,663
i	Employer contributions. Total from column (b) of line 3		**9i**	109,013,848
		Outstanding Balance		
j	Amortization credits as of valuation date	► ($)	**9j**	0
k	Interest as applicable to end of plan year on lines 9h, 9i, and 9j		**9k**	17,667,502
l	Full funding limitation (FFL) and credits			
	(1) ERISA FFL (accrued liability FFL)	**l(1)** 864,754,567		
	(2) "RPA '94" override (90% current liability FFL)	**l(2)**		
	(3) FFL credit		**l(3)**	0
m	(1) Waived funding deficiency		**m(1)**	
	(2) Other credits		**m(2)**	
n	Total credits. Add lines 9h through 9k, 9l(3), 9m(1), and 9m(2)		**9n**	379,050,013
o	Credit balance: If line 9n is greater than line 9g, enter the difference		**9o**	210,415,217
p	Funding deficiency: If line 9g is greater than line 9n, enter the difference		**9p**	0
	Reconciliation account:			
q	Current year's accumulated reconciliation account:			
	(1) Due to additional funding charges as of the beginning of the plan year	**q(1)**		
	(2) Due to additional interest charges as of the beginning of the plan year	**q(2)**		
	(3) Due to waived funding deficiencies:			
	(a) Reconciliation outstanding balance as of valuation date	**q(3)(a)**		
	(b) Reconciliation amount. Line 9c(2) balance minus line 9q(3)(a)	**q(3)(b)** 0		
	(4) Total as of valuation date ►		**q(4)**	0
10	Contribution necessary to avoid an accumulated funding deficiency. Enter the amount in line 9p or the amount required under the alternative funding standard account if applicable		**10**	0

11 Has a change been made in the actuarial assumptions for the current plan year? If "Yes," see instructions ☒ Yes ☐ No

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Part II Additional Information for Certain Plans Other Than Multiemployer Plans

Please see **Who Must File** in the Schedule B instructions to determine if you must complete Part II.

12 Additional required funding charge (see instructions):

a Enter "Gateway %." Divide line 1b(2) by line 1d(2)(c) and multiply by 100.
If line 12a is at least 90%, go to line 12q and enter -0-.
If line 12a is less than 80%, go to line 12b.
If line 12a is at least 80% (but less than 90%), see instructions and, if applicable, go to line 12q and enter -0-. Otherwise, go to line 12b ..... **12a** 101.70 %

b "RPA '94" current liability. Enter line 1d(2)(a) **12b**

c Adjusted value of assets (see instructions) **12c**

d Funded current liability percentage. Divide line 12c by 12b and multiply by 100 ..... **12d** %

e Unfunded current liability. Subtract line 12c from line 12b **12e**

f Liability attrubutable to any unpredicable contingent event benefit **12f**

g Outstanding balance of unfunded old liability **12g**

h Unfunded new liability. Subtract the total of lines 12f and 12g from line 12e. Enter -0- if negative **12h** 0

i Unfunded new liability amount (_____ % of line 12h) **12i** 0

j Unfunded old liability amount **12j**

k Deficit reduction contribution. Add lines 12i, 12j and 1d(2)(b) **12k** 0

l Net charges in funding standard account used to offset the deficit reduction contribution. Enter a negative number if less than zero **12l** 0

m Unpredictable contingent event amount:

(1)	Benefits paid during year attributable to unpredictable contingent event ...	m(1)	
(2)	Unfunded current liability percentage. Subtract the percentage on line 12d from 100%	m(2)	%
(3)	Enter the product of lines 12m(1) and 12m(2)	m(3)	0
(4)	Ammortization of all unpredictable contingent event liabilities	m(4)	
(5)	"RPA '94" additional amount (see instructions)	m(5)	0

(6) Enter the greatest of lines 12m(3), 12m(4), or 12m(5) ..... **m(6)** 0

n Preliminary additional funding charge: Enter the excess of line 12k over line 12l (if any), plus line 12m(6), adjusted to end of year with interest **12n** 0

o Contributions needed to increase current liability percentage to 100% (see instructions) **12o**

p Additional funding charge prior to adjustment: Enter the lesser of line 12n or 12o **12p** 0

q Adjusted additional funding charge. (.0% of line 12p) **12q** 0

APPENDIX A - SCHEDULE B ATTACHMENTS

Statement of Actuarial Assumptions and Methods – Schedule B Line 6

Plan Sponsor National Telecommunications Cooperative Association

EIN/PN 52-0741336/333

Interest Rates

Valuation 7.00% (unchanged from 7.00% last year)

RPA'94 Current liability 6.29% (changed from 6.48% last year)

PPA Funding Target

	Segment 1	Segment 2	Segment 3
Current Year	3.92%	5.52%	6.29%
Prior Year	4.16%	5.72%	6.48%

PBGC Premium Funding Target

	Segment 1	Segment 2	Segment 3
Current Year	2.33%	3.55%	4.11%
Prior Year	2.04%	4.03%	4.82%

Lump Sums Actual 3-segment yield curve for distributions assumed to occur in valuation year and assumed 3-segment yield curve for distributions assumed to occur in future years, based on following schedule:

Year	Segment 1	Segment 2	Segment 3
2018	1.93%	3.57%	4.36%
2019+	4.00%	5.50%	6.25%

In the prior year, the 1st, 2nd, and 3rd segment interest rates for distributions during 2018 and later were 4.00%, 5.50%, and 6.50%, respectively.

Covered Pay

Assumed Plan compensation for the year beginning on the valuation date was determined as the base rate of pay on the valuation date.

Compensation Increases

The annual rate of a participant's salary increase was assumed to be based on the participant's age. The following shows the assumed rates of increase at illustrative ages:

Age	Rate
25	7.60%
30	5.90%
35	5.20%
40	4.70%
45	3.80%
50	3.30%
55	3.10%
60	3.00%
65	3.00%

APPENDIX A - SCHEDULE B ATTACHMENTS (cont.)

Future Increases in Maximum Benefits, Social Security Wage Base, and Plan Compensation Limitations	Projected benefits are limited to the maximum presently allowed under IRC Section 415. Plan compensation is limited to the maximum presently allowed under IRC Section 401(a)(17). No provision is made for future increases in the maximum annual benefit, Social Security Wage Base, or compensation limit.
Assumed Cost-of-Living Adjustments	2.50%
Administrative Expenses	The amount included this year for Administrative Expenses is $14,726,009. This amount is estimated by assuming last year's administrative expenses, increased by 2.5%, plus actual PBGC premiums for the year.
Mortality (other than for lump sum distribution)	• For RPA '94 Current Liability and Funding Target: Male and Female 2018 PPA Static Mortality for Non-Annuitants is used for participants in the valuation before they begin receiving payment. Male and Female 2018 PPA Static Mortality for Annuitants is used for participants currently in payment and once participants not in payment status move to in payment status. • For ASC960: Male and Female Society of Actuaries' RP-2018 Employees mortality table generationally projected with Scale MP-2018 for participants before they begin receiving payment. Male and Female Society of Actuaries' RP-2018 for Healthy Annuitants mortality table generationally projected with Scale MP-2018 for participants currently in payment and once participants not in payment status move to in payment status. • For all other purposes: Separate rates for disabled participants (based on RP-2017 "Disabled Retiree" table), non-annuitants (based on RP-2017 "Employees" table) and annuitants (based on RP-2017 "Healthy Annuitants" table), all generationally projected using Scale MP-2017. • Last year for RPA '94 Current Liability and Funding Target: Male and Female 2017 PPA Static Mortality for Non-Annuitants was used for participants in the valuation before they begin receiving payment. Male and Female 2017 PPA Static Mortality for Annuitants was used for participants currently in payment and once participants not in payment status move to in payment status. • Last Year for ASC960: Male and Female Society of Actuaries' RP-2017 Employees mortality table generationally projected with Scale MP-2017 for participants before they begin receiving payment. Male and Female Society of Actuaries' RP-2017 for Healthy Annuitants mortality table generationally projected with Scale MP-2017 for participants currently in payment and once participants not in payment status move to in payment status. • Last Year for all other purposes: Separate rates for disabled participants (based on RP-2016 "Disabled Retiree" table), non-annuitants (based on RP-2016 "Employees" table) and annuitants (based on RP-2016 "Healthy Annuitants" table), all generationally projected using Scale MP-2016

APPENDIX A - SCHEDULE B ATTACHMENTS (cont.)

Mortality for lump sum distributions

- For RPA '94 Current Liability and Funding Target: the 2018 mortality table specified in Internal Revenue Code section 417(e). In prior year, the 2017 mortality table specified in Internal Revenue Code section 417(e).
- For all other purposes: The 2018 mortality table specified in Internal Revenue Code section 417 (e) is used for lump sum distributions in 2018. The Society of Actuaries' RP-2017 mortality table generationally projected with Scale MP-2017 for lump sum distributions after 2018. In the prior year, the 2017 mortality table specified in Internal Revenue Code section 417 (e) was used for distributions in 2017 and the Society of Actuaries' RP-2016 mortality table generationally projected with Scale MP-2016 for lump sum distributions after 2017.

Retirement

The following rates of retirement were used:

Retirement Rates for Non-ROE Eligible participants:

Age	Rate
55-59	4.0%
60	7.0%
61	10.0%
62-63	15.0%
64	20.0%
65	40.0%
66-69	25.0%
70	100.0%

Retirement Rates for ROE Eligible participants under age 65 with 85 points:

Age	Rate
55-59	15.0%
60-64	20.0%
65	40.0%
66-69	25.0%
70	100.0%

Retirement Rates for ROE Eligible participants under age 65 without 85 points:

Age	Rate
55-59	2.0%
60-61	7.0%
62-63	15.0%
64	20.0%
65	40.0%
66-69	25.0%
70	100.0%

APPENDIX A - SCHEDULE B ATTACHMENTS (cont.)

Representative Termination Rates not due to disability, retirement or mortality

Representative termination rates if service less than 5 years:

Service	Rate
0	16.0%
1	13.0%
2	10.0%
3	9.0%
4	7.0%

Representative termination rates if service is greater than or equal to 5 years:

Service	Rate
20	6.6%
25	6.6%
30	3.6%
35	3.8%
40	3.1%
45	2.8%
50	2.6%
55	0.0%
60 and over	0.0%

Disability Rates

None.

Form of Payment

65% of retirements are assumed to elect a lump sum at termination or retirement. Of the remaining 35%, 30% are assumed to elect a ten-year certain annuity and 70% are assumed to elect a 75% joint and survivor annuity. Vested participants with termination dates in the year prior to the valuation are assumed to elect a lump sum. Terminated vested participants who are eligible for Rule of 85 and will reach 85 points before age 65 are assumed to elect a lump sum in the year they reach 85 points. All other terminated vested participants are assumed to elect a life annuity with payments guaranteed for 10 years commencing at age 65.

Marriage

Of all active participants, 85% are assumed to be married.

Spouse Age

Wife 3 years younger than husband.

Inclusion Date

The valuation date coincident with or next following the date on which the employee becomes a participant.

Employees

It is assumed that there will be no new or rehired employees.

APPENDIX A - SCHEDULE B ATTACHMENTS (cont.)

Employees at Withdrawn Employers	Active employees at withdrawn employers are assumed to commence benefits at the same rates as active employees at other participating employers.
Cost Method	The Aggregate Cost Method is used to determine the normal cost for retirement, termination, and ancillary benefits. Under this cost method, the total of the present value of all future benefits for all participants reduced by the actuarial value of assets is divided by the present value of future compensation to determine the Normal Cost Rate. The present value of future benefits is determined by discounting, to the valuation date, the total future benefit cash flows from the plan to all of the current participants, using the actuarial assumptions. The actuarial value of assets is adjusted for certain funding standard account balances or by included-but-not-deducted contributions less deducted-but-not-included contributions. The present value of future compensation is determined by discounting, to the valuation date, all of the pensionable compensation anticipated to be paid to the current participants, using the actuarial assumptions. The Normal Cost Rate is then multiplied by the pensionable compensation for participants under retirement age to arrive at the Normal Cost payable on the valuation date. The final Normal Cost, after increasing this result for expected administrative expenses, if applicable, may not be less than zero. For this purpose, “retirement age” means the earliest age at which probability of retirement is 100%.
Asset Method	The actuarial value of assets is equal to the market value of assets except that the difference between total investment return and expected return (based on the valuation interest rate) is recognized at the rate of 20% per year. The resulting value is limited to a range of 80% to 120% of market value.
PPA Actuarial Value of Assets Method	The PPA actuarial value of assets is the average of the fair market value of assets on the valuation date and the two immediately preceding valuation dates, adjusted for contributions, benefits, administrative expenses and expected earnings (with such expected earnings limited as described in IRS Notice 2009-22). The average asset value must be within 10% of market value, including discounted contributions receivable (discounted using the effective interest rate for the prior plan year).
Participant Data	National Telecommunications Cooperative Association provided employee data as of the valuation date. Data for other participants was provided by National Telecommunications Cooperative Association. We have relied on all the data and information provided, including plan provisions and asset information, as being complete and accurate. We have not independently verified the accuracy or completeness of the data or information provided, but we have performed limited checks for reasonableness. Asset data was provided by the National Telecommunications Cooperative Association.
Tax Policy	The actuarial valuation performed for the plan year ending December 31, 2018 is used to determine the maximum deductible contribution for the tax year ending December 31, 2018.

APPENDIX A - SCHEDULE B ATTACHMENTS (cont.)

Benefits Not Included in Valuation	We believe all significant Plan provisions are reflected in this valuation.
Changes in Assumptions and Methods Since Last Actuarial Valuation	The PPA segment interest rates were updated from the September 2016 rates of 4.16%, 5.72% and 6.48% to the September 2017 rates of 3.92%, 5.52% and 6.29%. The RPA '94 Current Liability interest rate was changed from 6.48% to 6.29%. The PBGC interest rates were updated from the January 2017 rates of 2.04%, 4.03% and 4.82% to the January 2018 rates of 2.33%, 3.55% and 4.11% The RPA '94 Current Liability and Funding Target liability annuitant mortality tables were updated to reflect an additional year of mortality improvements. The valuation mortality table and lump sum mortality table for distributions after 2018 were updated to reflect the Society of Actuaries' RP-2017 mortality table projected generationally with Scale MP-2017. The lump sum mortality assumption for RPA '94 Current Liability and Funding Target liability was changed from the 2017 table to the 2018 table, as specified in Internal Revenue Code section 417(e). The lump sum interest rate assumption for distributions assumed to occur during 2018 was changed from 4.00%, 5.50% and 6.50% to 1.93%, 3.57% and 4.36% (the actual rates that apply for distributions during 2018), the 1st, 2nd and 3rd segment rates, respectively. The lump sum interest rate assumption for distributions assumed to occur after 2018 was changed from 4.00%, 5.50% and 6.50% to 4.00%, 5.50% and 6.25%, the 1st, 2nd and 3rd segment rates, respectively. The expected administrative expense assumption was changed from $14,726,715 to $14,726,009. The method for determining this assumption did not change.
Source of Data and Other Information	The plan sponsor furnished participant data as of 1/1/2018. Information on assets, contributions and plan provisions was supplied by the plan sponsor. Data and other information were reviewed for reasonableness and consistency, but no audit was performed. Based on discussions with the plan sponsor, assumptions or estimates were made when data were not available, and the data was adjusted to reflect any significant events that occurred between the date the data was collected and the measurement date. We are not aware of any errors or omissions in the data that would have a significant effect on the results of our calculations.

APPENDIX B - SCHEDULE B ATTACHMENTS (cont.)

Summary of Principal Plan Provisions – Schedule B Lines 6

Effective Date:

As amended through January 1, 2018.

Eligibility Requirements:

Any one of the following, depending upon system election:

i. Date of employment
ii. Completion of three months of service
iii. Completion of six months of service
iv. Completion of one year of service
v. Completion of two years of service
vi. Attainment of age 21
vii. Attainment of age 21 and completion of three months of service
viii. Attainment of age 21 and completion of six months of service
ix. Attainment of age 21 and completion of one year of service
x. Attainment of age 21 and completion of two years of service.

Retirement Dates:

a. Normal - The first of the month containing the 65th birthday.

b. Early - The first of any month coincident with or following the month containing the 55th birthday.

Retirement Benefits:

a. Normal - The benefit is based on the final average earnings. The benefit is equal to the final average earnings multiplied by the product of:

i. 0.2168 for all earnings prior to January 1, 2008, and 0.2091 for all earnings on or after January 1, 2008 but prior to January 1, 2014, and 0.1855 for all earnings on or after January 1, 2014, and 0.1531 for all earnings on or after January 1, 2017 multiplied by
ii. The sum of accumulated system and participant net contribution percents.

b. Early - The benefit amount is the accrued benefit determined as in 4.a. based on past service and salaries at the date of early retirement, subject to the following:

i. The full accrued benefit is payable if the employee is eligible to retire under the Rule-of-85. Only employees of systems which have adopted this provision may become eligible.

ii. If not, the benefit in 4.a.i. is reduced 1/4% for each month by which the member's 60th birthday, or Early Retirement Date, if later, precedes his Normal Retirement Date, plus 1/2% for each of the next 60 months by which the payment commencement date precedes age 60.

c. Late - Accrued benefit of 4.a. above, based on credited service and final average earnings at the date of late retirement, increased 1/4% for each month by which the member's Late Retirement Date follows his Normal Retirement Date.

APPENDIX B - SCHEDULE B ATTACHMENTS (cont.)

Termination Benefits:

The accrued benefit of 4.a. above based on credited service at date of termination. An actuarially equivalent benefit is payable at any time.

Death Benefits:

An amount equal to the greater of:

i. 100 times the monthly pension that would have been payable had the participant survived until his Normal Retirement Date and retired with benefits payable in the form of a single life annuity with payments guaranteed for ten years.

ii. The present value of the participant's Accrued Retirement Benefit.

Employee Contributions:

Employees may be required to contribute to the Plan as a condition of participation. The amount of the contribution is equal to a designated percentage of earnings. Interest is credited on all employee contributions.

Form of Benefit Payment:

For married participants, an actuarially equivalent 50% Joint and Survivor Benefit is the normal form of benefit.

For all others, the normal form of benefit is a life annuity with payments guaranteed for ten years.

Optional forms of payment are available under the Plan to all participants.

Changes in Plan Provisions:

Various member companies made changes to their benefit levels and other adoption agreement elections, some of which may have been prospective only.

APPENDIX B - SCHEDULE B ATTACHMENTS (cont.)

Glossary

Actuarial Accrued Liability	This is computed differently under different actuarial cost methods. Generally, the actuarial accrued liability represents the portion of the cost of the participants' anticipated retirement, termination and/or death and disability benefits allocated to the years before the current plan year.
Actuarial Gain or Loss	From one plan year to the next, if the experience of the plan differs from that anticipated using the actuarial assumptions, an actuarial gain or loss occurs. For example, an actuarial gain would occur if the assets in the trust earned 12% for the year while the assumed rate of return used in the valuation was 7.75%.
Current Liability	This is computed the same as the Present Value of Accumulated Benefits, but using interest rate and mortality assumptions specified by the IRS. This quantity is used in the calculation of the plan's funded percentage, to determine whether the plan sponsor will be allowed to make a tax-deductible contribution to the plan for the year, to determine whether quarterly contribution deposits are required, to determine whether the plan is exempt from the deficit reduction contribution and, if not, to determine the amount of the additional funding charge.
Funding Target	Present value of benefits accrued under the plan as of the beginning of the plan year, determined under ongoing or "not-at-risk" assumptions specified in Internal Revenue Code Section 430.
Normal Cost	Computed differently under different actuarial cost methods, the normal cost generally represents the portion of the cost of the participants' anticipated retirement, termination, death and disability benefits allocated to the current plan year. Employer Normal Cost also includes the cost of anticipated administrative expenses and is reduced by anticipated employee contributions and so is sometimes called Net Total Employer Normal Cost.
Present Value of Accumulated Benefits	Computed in accordance with ASC 960, this quantity is determined independently from the plan's actuarial cost method. This is the present value of a participant's accrued benefit as of the valuation date, assuming the participant will earn no more credited service and will receive no future salary.
Present Value of Future Benefits	This is computed by projecting the total future benefit cash flow from the plan, using actuarial assumptions, and then discounting the cash flow to the valuation date.
Present Value of Vested Benefits	This is the portion of the Present Value of Accumulated Benefits in which the employee would have a vested interest if the employee were to separate from service with the employer on the valuation date.

APPENDIX C - SCHEDULE B ATTACHMENTS

Schedule B, Line 3 -
Schedule of Plan Year Contributions

Contribution Date	Employer Contribution	Employee Contribution
January 15, 2018	-	2,318,064
February 15, 2018	-	2,320,940
March 15, 2018	-	2,984,277
April 15, 2018	-	2,339,255
May 15, 2018	-	2,341,604
June 15, 2018	-	2,332,652
July 15, 2018	-	2,352,397
August 15, 2018	-	2,338,720
September 15, 2018	84,646	11,809
October 15, 2018	-	-
November 15, 2018	-	-
December 15, 2018	-	-
January 15, 2019	16,670,228	-
February 15, 2019	12,363,747	-
March 15, 2019	16,164,750	-
April 15, 2019	12,860,316	-
May 15, 2019	12,731,562	-
June 15, 2019	12,645,991	-
July 15, 2019	12,623,008	-
August 15, 2019	12,700,773	
September 15, 2019	168,827	-
Total	109,013,848	19,339,718

Plan Name: R & S Program for Employees of NTCA and Its Members
EIN / PN: 52-0741336/333
Plan Sponsor: National Telecommunications Cooperative Association

APPENDIX C - SCHEDULE B ATTACHMENTS

Schedule B, Line 6b –
Description of Weighted Average Retirement Age
as of January 1, 2018

See Appendix A for retirement rates. The average retirement age for Line 6b was calculated by determining the average age at retirement for those current active participants expected to reach retirement, based on all current decrements assumed.

Plan Name:	R & S Program for Employees of NTCA and Its Members
EIN / PN:	52-0741336/333
Plan Sponsor:	National Telecommunications Cooperative Association

APPENDIX C - SCHEDULE B ATTACHMENTS (cont.)

Line 8c - Schedule of Active Participant Data as of 01/01/2018

Attachment to Schedule B (Form 5500)

Number and Average Plan Compensation Limited by IRC 401(a)(17) Distributed by Attained Age and Attained Years of Credited Service [1]

Attained Age	Attained Years of Credited Service													
	0	1	2	3	4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40 & Over	Total
Under 25	65	65	49	31	8	4								222
	$38,511	$38,470	$41,412	$48,423										$40,824
25-29	89	130	132	96	63	177	6							693
	$40,506	$43,084	$46,004	$51,247	$52,587	$54,423								$48,367
30-34	79	112	104	88	78	377	241	5						1,084
	$49,499	$47,641	$51,949	$57,744	$54,805	$58,415	$62,938							$56,718
35-39	70	89	83	76	58	352	483	309	8					1,528
	$49,616	$51,382	$54,687	$56,283	$61,485	$63,344	$66,474	$69,130						$63,277
40-44	54	69	59	49	52	283	369	533	213	6				1,687
	$51,037	$60,159	$54,935	$60,527	$60,964	$65,126	$66,592	$73,258	$77,874					$68,377
45-49	47	70	59	51	33	233	327	518	380	111	4			1,833
	$59,607	$60,837	$57,639	$67,119	$79,344	$65,787	$69,159	$72,309	$82,483	$85,358				$72,548
50-54	32	39	39	43	36	155	247	435	319	228	90	13		1,676
	$60,013	$61,651	$63,590	$63,330	$70,169	$72,960	$66,979	$70,618	$80,451	$88,534	$88,899	$73,558		$74,840
55-59	28	39	30	24	30	170	203	351	301	180	86	85	11	1,538
	$59,717	$54,982	$70,236	$79,735	$80,784	$73,046	$64,684	$68,438	$75,149	$83,407	$103,006	$100,284	$88,023	$75,302
60-64	12	20	24	13	19	118	117	182	173	70	32	49	37	866
	$62,978	$60,628	$60,918	$46,643	$77,847	$70,230	$63,048	$66,296	$72,241	$84,652	$84,891	$98,283	$102,407	$72,737
65-69	2	1	4	1	5	28	34	34	34	15	5	8	17	188
						$77,646	$65,314	$71,507	$69,918	$85,284			$89,064	$75,332
70&Over	1	4			1	4	5	7	4	2			2	30
														$77,921
Total	479	638	583	472	383	1901	2032	2374	1432	612	217	155	67	11,345
	$49,202	$50,923	$53,110	$58,208	$63,463	$64,377	$66,136	$70,790	$78,118	$86,003	$93,485	$96,831	$95,550	$67,856

[1]There are 747 withdrawn employees not represented on this distribution, for a total of 12,092 active participants.

Plan Name: R & S Program for Employees of NTCA and Its Members
EIN / PN: 52-0741336/333
Plan Sponsor: National Telecommunications Cooperative Association

APPENDIX C - SCHEDULE B ATTACHMENTS (cont.)

Schedule B, Line 11 –
Justification for Change in Actuarial Assumptions
as of January 1, 2018

The RPA ’94 Current Liability interest rate was changed from 6.48% to 6.29%.

The RPA ‘94 Current Liability and Funding Target liability annuitant mortality tables were updated to reflect an additional year of mortality improvements.

The PPA segment interest rates were updated from the September 2016 rates of 4.16%, 5.72% and 6.48% to the September 2017 rates of 3.92%, 5.52% and 6.29%.

The PBGC interest rates were updated from the January 2017 rates of 2.04%, 4.03% and 4.82% to the January 2018 rates of 2.33%, 3.55% and 4.11%

The valuation mortality table and lump sum mortality table for distributions after 2018 were updated to reflect the Society of Actuaries’ RP-2017 mortality table projected generationally with Scale MP-2017.

The lump sum mortality assumption for RPA ‘94 Current Liability and Funding Target liability was changed from the 2017 table to the 2018 table, as specified in Internal Revenue Code section 417(e).

The lump sum interest rate assumption for distributions assumed to occur during 2018 was changed from 4.00%, 5.50% and 6.50% to 1.93%, 3.57% and 4.36% (the actual rates that apply for distributions during 2018), the 1st, 2nd and 3rd segment rates, respectively.

The lump sum interest rate assumption for distributions assumed to occur after 2018 was changed from 4.00%, 5.50% and 6.50% to 4.00%, 5.50% and 6.25%, the 1st, 2nd and 3rd segment rates, respectively.

The expected administrative expense assumption was changed from $14,726,715 to $14,726,009. The method for determining this assumption did not change.

Schedule SB, Part V

Summary of Plan Provisions

Effective Date:

As amended through January 1, 2018.

Eligibility Requirements:

Any one of the following, depending upon system election:

i. Date of employment
ii. Completion of three months of service
iii. Completion of six months of service
iv. Completion of one year of service
v. Completion of two years of service
vi. Attainment of age 21
vii. Attainment of age 21 and completion of three months of service
viii. Attainment of age 21 and completion of six months of service
ix. Attainment of age 21 and completion of one year of service
x. Attainment of age 21 and completion of two years of service.

Retirement Dates:

a. Normal - The first of the month containing the 65th birthday.

b. Early - The first of any month coincident with or following the month containing the 55th birthday.

Retirement Benefits:

a. Normal - The benefit is based on the final average earnings. The benefit is equal to the final average earnings multiplied by the product of:

i. 0.2168 for all earnings prior to January 1, 2008, and 0.2091 for all earnings on or after January 1, 2008 but prior to January 1, 2014, and 0.1855 for all earnings on or after January 1, 2014, and 0.1531 for all earnings on or after January 1, 2017 multiplied by
ii. The sum of accumulated system and participant net contribution percents.

b. Early - The benefit amount is the accrued benefit determined as in 4.a. based on past service and salaries at the date of early retirement, subject to the following:

i. The full accrued benefit is payable if the employee is eligible to retire under the Rule-of-85. Only employees of systems which have adopted this provision may become eligible.

ii. If not, the benefit in 4.a.i. is reduced 1/4% for each month by which the member's 60th birthday, or Early Retirement Date, if later, precedes his Normal Retirement Date, plus 1/2% for each of the next 60 months by which the payment commencement date precedes age 60.

c. Late - Accrued benefit of 4.a. above, based on credited service and final average earnings at the date of late retirement, increased 1/4% for each month by which the member's Late Retirement Date follows his Normal Retirement Date.

Schedule SB, Part V

Termination Benefits:

The accrued benefit of 4.a. above based on credited service at date of termination. An actuarially equivalent benefit is payable at any time.

Death Benefits:

An amount equal to the greater of:

i. 100 times the monthly pension that would have been payable had the participant survived until his Normal Retirement Date and retired with benefits payable in the form of a single life annuity with payments guaranteed for ten years.

ii. The present value of the participant's Accrued Retirement Benefit.

Employee Contributions:

Employees may be required to contribute to the Plan as a condition of participation. The amount of the contribution is equal to a designated percentage of earnings. Interest is credited on all employee contributions.

Form of Benefit Payment:

For married participants, an actuarially equivalent 50% Joint and Survivor Benefit is the normal form of benefit.

For all others, the normal form of benefit is a life annuity with payments guaranteed for ten years.

Optional forms of payment are available under the Plan to all participants.

Changes in Plan Provisions:

Various member companies made changes to their benefit levels and other adoption agreement elections, some of which may have been prospective only.

Schedule SB, Part V

Glossary

Actuarial Accrued Liability	This is computed differently under different actuarial cost methods. Generally, the actuarial accrued liability represents the portion of the cost of the participants' anticipated retirement, termination and/or death and disability benefits allocated to the years before the current plan year.
Actuarial Gain or Loss	From one plan year to the next, if the experience of the plan differs from that anticipated using the actuarial assumptions, an actuarial gain or loss occurs. For example, an actuarial gain would occur if the assets in the trust earned 12% for the year while the assumed rate of return used in the valuation was 7.75%.
Current Liability	This is computed the same as the Present Value of Accumulated Benefits, but using interest rate and mortality assumptions specified by the IRS. This quantity is used in the calculation of the plan's funded percentage, to determine whether the plan sponsor will be allowed to make a tax-deductible contribution to the plan for the year, to determine whether quarterly contribution deposits are required, to determine whether the plan is exempt from the deficit reduction contribution and, if not, to determine the amount of the additional funding charge.
Funding Target	Present value of benefits accrued under the plan as of the beginning of the plan year, determined under ongoing or "not-at-risk" assumptions specified in Internal Revenue Code Section 430.
Normal Cost	Computed differently under different actuarial cost methods, the normal cost generally represents the portion of the cost of the participants' anticipated retirement, termination, death and disability benefits allocated to the current plan year. Employer Normal Cost also includes the cost of anticipated administrative expenses and is reduced by anticipated employee contributions and so is sometimes called Net Total Employer Normal Cost.
Present Value of Accumulated Benefits	Computed in accordance with ASC 960, this quantity is determined independently from the plan's actuarial cost method. This is the present value of a participant's accrued benefit as of the valuation date, assuming the participant will earn no more credited service and will receive no future salary.
Present Value of Future Benefits	This is computed by projecting the total future benefit cash flow from the plan, using actuarial assumptions, and then discounting the cash flow to the valuation date.
Present Value of Vested Benefits	This is the portion of the Present Value of Accumulated Benefits in which the employee would have a vested interest if the employee were to separate from service with the employer on the valuation date.

Group #	Group Name	EIN Number	Total Contributions
41519	Horry Tele Coop., Inc.	57-0337423	$7,529,873.74
17537	Rural Tele Service Co., Inc.	48-0538069	$3,838,743.36
41518	Farmers Tele Coop., Inc.	53-5335116	$3,828,725.12
41837	SCTG Holdings, LLC	58-2291056	$2,212,635.59
35724	SRT Communications Inc.	45-0418249	$2,047,847.81
42508	Golden West Telecommun Coop	46-0237830	$1,977,341.13
34513	Skyline Membership Corporation, NC	56-0594332	$1,968,013.61
37530	Panhandle Tele Coop. Inc.	73-0655435	$1,886,377.13
45504	Ubta-Ubet Comm dba Strata Networks	87-0217858	$1,879,300.73
35533	Consolidated Telcom	45-0274821	$1,822,607.63
34535	Star Tele. Memb. Corp.	56-0706976	$1,722,447.67
32504	ENMR-Plateau Telecommunications	85-6000923	$1,609,694.34
43545	North Central Tele Coop. Inc.	62-0516439	$1,585,787.90
27722	Nemont Telephone Coop.	81-0243437	$1,579,814.96
34643	Carolina West Wireless, Inc.	56-1704709	$1,499,884.62
44557	Peoples Tele Coop., Inc.	75-0830462	$1,477,446.60
17543	Pioneer Tele Assn., Inc.	48-0568142	$1,467,657.73
24561	Paul Bunyan Rural Tele Co-Op	41-0745441	$1,451,796.55
41522	Sandhill Tele Coop, Inc.	57-0351757	$1,446,242.91
34509	Yadkin Valley Tele Memb. Corp.	56-0558967	$1,441,171.48
27513	Three Rivers Tele Co-Op, Inc.	81-0243702	$1,437,896.68
45505	South Central Utah Tele Assn. Inc.	87-0224302	$1,398,332.48
34521	Wilkes Tele Memb. Corp.	56-0652482	$1,384,982.95
35524	SRT Communications, Inc.	45-0418249	$1,371,063.37
43544	Twin Lakes Tele Coop. Corp.	62-0517180	$1,365,001.24
27756	Blackfoot Tele Coop. Inc.	81-0251379	$1,348,756.99
17548	Craw-Kan Tele Coop., Inc.	48-0583719	$1,207,816.36
34531	ATMC	56-0634573	$1,170,911.58
18505	South Central Rural Tele Coop	61-0471202	$1,145,515.83
27516	Triangle Tele Coop. Assn. Inc.	81-6005237	$1,145,065.05
43547	Ben Lomand Rural Telephone Coop	62-0532537	$1,021,421.93
35526	Northwest Communications Coop	45-0235053	$1,013,818.87
27716	Triangle Tele. Coop. Assn. Inc.	81-6005237	$1,007,685.00
9503	Services Management Corp.	52-1200541	$999,059.30
43521	DTC Communications	62-0513986	$901,694.26
41506	W. Carolina Rural Tele Coop., Inc.	57-0336544	$890,400.90
2520	Arctic Slope Tele. Assn. Coop. Inc.	92-0072774	$843,013.58
32512	Penasco Valley Tele Coop Inc	85-0112816	$824,022.13
42521	Interstate Telecom. Coop., Inc.	46-0398588	$804,314.20
35525	Reservation Telephone Cooperative	45-0233514	$798,795.65
15634	Central Indiana Communications, Inc.	35-1566736	$793,274.18
26756	Chariton Valley Communications Corp.	43-1942625	$782,574.22

44575	Hill Country Tele Coop. Inc.	74-1197928	$780,941.58
38506	Pioneer Tele Coop	93-0395815	$760,449.24
28656	RVW, Inc.	47-0411215	$744,180.68
44549	Central Texas Tele Coop. Inc.	75-0853485	$736,797.61
50574	Chibardun Tele Coop. Inc.	39-0960412	$730,416.45
15666	Intelligent Fiber Network, LLC	02-0562792	$729,343.50
35528	West River Telecommunications Coop.	45-0236082	$726,122.19
35522	United Tele Mutual Aid Corp	45-0239389	$710,392.95
9501	NTCA	52-0741336	$701,256.65
17531	United Tele Assn. Inc.	48-0556219	$688,140.11
18522	Foothills Rural Tele Co-Op	61-0480100	$672,997.68
27511	Nemont Tele Coop. Inc.	81-0243437	$671,190.03
24737	Consolidated Telephone Co.	41-0721924	$641,929.63
14567	Cass Comm Management, Inc.	37-1348713	$640,643.46
47503	Citizens Tele Coop	54-0169578	$639,243.53
34518	Surry Telephone Memb. Corp.	56-0593120	$636,939.38
42526	Alliance Communications Coop. Inc.	46-0138950	$626,223.50
42565	Northern Valley Communications	91-1789911	$592,445.92
50545	West Wisconsin Telcom Coop Inc.	39-0884116	$592,136.45
24506	Garden Valley Tele. Co.	41-0271520	$589,391.73
2509	Copper Valley Tel. Coop. Inc.	92-0031468	$588,937.86
35612	North Dakota Telephone Co.	41-0902524	$584,295.71
18506	Mountain Rur. Tele Coop Corp. Inc.	61-0467317	$582,785.29
43581	Black Box Network Services, Inc.	62-1202425	$578,028.59
17576	Blue Valley Telecommunications, Inc.	48-0663862	$574,968.32
43548	Bledsoe Tele Coop	62-0526657	$565,972.08
17544	KanOkla Telephone Association	48-0600717	$565,388.42
17583	Tri-County Tele Assn. Inc.	48-0687555	$550,124.52
44569	Dell Tele Coop Inc	74-6024749	$547,947.95
44592	Colorado Valley Tele Coop., Inc.	74-1362636	$542,861.21
18525	West Kentucky Rural Tele Coop.	61-0471985	$538,559.92
11539	Pineland Telephone Co-Op Inc.	58-0607833	$529,092.61
14518	Adams Tel Co-Op	37-0703673	$509,613.70
47510	Scott County Tele Coop, Inc.	54-0557573	$497,762.04
11560	Alma Telephone Company Inc.	58-0159299	$491,927.29
17552	Golden Belt Tele Assn., Inc.	48-0590850	$489,635.10
3507	Valley Telephone Coop. Inc.	86-0185485	$474,337.46
34529	Randolph Tele Memb Corp	56-0631394	$471,660.37
27725	Vision Net, Inc.	81-0500059	$469,631.53
44817	West Central Wireless	75-2168267	$465,358.67
32501	Leaco Rural Tele Coop, Inc.	85-0116343	$463,098.23
17580	Wamego Telephone Company Inc.	48-0464870	$460,037.92
18530	Duo County Tele Co-Op Corp Inc	61-0529587	$452,953.95

26633	Grand River Mutual Telephone Corp.	44-0549951	$439,024.61
44530	Poka-Lambro Telephone Coop. Inc.	75-0806646	$433,014.30
50531	Vernon Communications Coop.	39-0838123	$432,184.60
35712	North Dakota Telephone Company	41-0902524	$421,817.52
35521	Dakota Central Telecom. Coop	45-0237471	$407,807.89
42516	James Valley Coop. Tele Co.	46-0233062	$399,602.03
18514	Peoples Rural Telephone Coop.	61-0461840	$398,894.56
41712	Palmetto Rural Telephone Co-Op. Inc	57-0339353	$398,160.68
50596	Tri-County Comm. Coop, Inc.	39-1024048	$388,619.66
13505	Project Mutual Tel Coop Assn	82-0156800	$387,867.53
27517	Blackfoot Tele Coop. Inc.	81-0251379	$386,640.28
44567	XIT Rural Telephone Coop. Inc.	75-0829216	$384,383.49
15706	NineStar Connect	35-0914373	$381,754.99
42522	Venture Communications Cooperative	46-0238017	$379,879.35
16575	South Slope Cooperative Telephone	42-0819332	$375,317.23
6514	Eastern Slope Rural Tel Assn.	84-0486247	$369,672.77
14791	Wabash Tele. Coop. Inc.	37-0697499	$367,137.82
41512	Palmetto Rural Tele Coop. Inc.	57-0339353	$365,855.17
24505	Garden Valley Tele Co.	41-0271520	$364,893.88
4514	Southwest Arkansas Tele Coop. Inc.	71-0259207	$361,332.81
37602	Monte R. Lee & Co. Cons. Engrs.	73-1074412	$356,455.83
24564	West Central Tele Assn.	41-0722430	$356,219.81
15522	Perry-Spencer Rural Tele Coop.	35-0921201	$356,214.00
35577	Polar Comm Mutual Aid Corp	45-0236904	$356,034.76
50507	Marquette-Adams Tele Coop Inc.	39-0827871	$351,421.03
11536	Bulloch Telephone Coop Inc	58-0621752	$333,962.45
32555	Baca Valley Telephone Company Inc	86-0285649	$331,237.83
44544	Taylor Tele Coop Inc.	75-0842158	$327,443.45
50513	Chequamegon dba Norvado	39-0834903	$325,047.26
24758	ACIRA, LLC	26-3451490	$318,372.34
10701	Townes Telecommunications Services Corp	73-1579916	$316,078.24
11534	Planters Rural Tele Coop, Inc.	58-0604830	$315,679.39
16775	South Slope Cooperative Telephone	42-0819332	$312,585.82
4543	Townes Telecommunications Inc.	75-1769042	$311,691.26
41503	Piedmont Rural Telephone Coop, Inc.	57-0328632	$307,772.46
35565	Red River Rural Tele Assoc. Inc.	45-0251341	$307,681.07
35799	Dickey Rural Telephone Coop.	45-0230868	$307,433.26
3621	San Carlos Apache Telecommunications	86-0851738	$305,373.60
49513	Hardy Telecommunications Inc.	55-0398418	$304,814.79
14827	Wabash Independent Networks	37-1348297	$303,834.54
44506	Five Area Tele Coop Inc.	75-6111577	$302,007.29
4502	Communications Supply Service Assoc	52-1078081	$298,865.91
14516	Wabash Tele Coop. Inc.	37-0697499	$297,146.22

26535	Chariton Valley Tele Corp.	43-0692435	$297,025.39
37536	Totah Communications, Inc.	73-0654707	$294,551.59
11562	Ringgold Telephone Co. Inc.	58-0699605	$287,460.16
29502	Moapa Valley Telephone Co.	88-0037435	$283,496.36
44517	South Plains Tele Coop. Inc.	75-0835780	$281,226.79
15550	New Paris Tele Inc	35-0545740	$280,818.82
5517	Siskiyou Telephone	94-0872110	$280,325.21
44630	Big Bend Telephone Company	74-1386464	$275,158.47
44522	Mid-Plains Rural Tele Coop. Inc.	75-0848791	$274,684.50
19514	Campti-Pleasant Hill Tele Co. Inc.	72-6023032	$274,128.18
32502	Roosevelt County Rural Tel Co (Yucca)	85-6002147	$269,190.05
3613	Gila River Telecommunications, Inc.	86-0891615	$269,143.16
24537	Consolidated Tele Co	41-0721924	$268,455.49
28534	Arapahoe Telephone Company	47-0093540	$266,220.91
35728	West River Telecommunications Coop.	45-0236082	$265,740.62
11545	Progressive Rural Tel Co-Op	58-0672930	$263,977.25
44845	First National Bank of Tom Bean	75-0616404	$260,162.92
1524	New Hope Telephone Cooperative	63-0321560	$256,962.96
21705	Telcom Insurance Services Corp.	52-1632917	$255,653.37
15722	Perry-Spencer Rural Telephone Coop.	35-0921201	$254,555.89
26533	Grand River Mutual Tele Corp	44-0549951	$249,847.05
24555	Halstad Tele Co	41-0295070	$248,565.01
28524	Northeast Nebraska Telephone Co.	47-0418455	$247,641.01
35527	Polar Comm Mutual Aid Corp	45-0236904	$247,118.67
17569	Wilson Telephone Company Inc.	48-0579038	$239,955.45
15530	SEI Communications	35-0941496	$238,142.42
37518	Grand Telephone Company, Inc.	73-0653204	$233,192.58
26534	Green Hills Tele Corp	44-0571589	$231,520.06
24512	Gardonville Coop. Tele Assn.	41-0627190	$228,524.94
27515	Northern Tele Coop. Inc.	81-0247750	$228,059.73
27551	Southern Montana Telephone Co.	81-0107563	$227,039.99
17549	Rainbow Telecommunications Assn	48-0600104	$224,447.56
15730	SEI Communications	35-0941496	$216,185.18
42524	Midstate Communications	46-0240510	$214,103.15
50525	Richland-Grant Tele Coop. Inc.	39-0866595	$208,370.52
42722	Venture Communications Cooperative	46-0238017	$208,098.77
34621	Wilkes Communications, Inc.	56-2006265	$204,608.29
26536	Steelville Tele Exchange, Inc.	43-0680633	$203,083.20
6518	Plains Cooperative Tel. Assn. Inc.	84-0461506	$196,709.24
35725	Reservation Telephone Cooperative	45-0233514	$194,474.55
33649	Champlain Telephone Company	14-0558680	$193,819.41
15516	Daviess-Martin Rural Tele Corp.	35-0855641	$193,022.51
27744	Missouri Valley Communications Inc	33-1015308	$189,946.27

23527	Bloomingdale Telephone Co. Inc.	38-1527914	$189,126.78
50519	Citizens Tele Coop Inc.	39-0944208	$187,855.16
50502	Nelson Communications Cooperative	39-0790115	$187,773.80
16578	Heart Of Iowa Communications Coop.	42-0816897	$183,707.03
36640	Com Net Inc.	34-1753415	$183,589.25
28525	Three River Telco	47-0425474	$183,097.87
17589	Peoples Telecommunications, LLC	43-1939136	$180,911.62
18515	Ballard Rural Tele Coop. Inc.	61-0485742	$177,191.12
2632	Copper Valley Wireless, LLC	46-2091292	$176,967.82
44634	Totelcom Communications, LLC	75-0873589	$176,867.15
18532	Logan Tele Coop. Inc.	61-0507174	$173,975.13
24605	Minnesota Rural Water Association	41-1283589	$173,293.26
44637	Cumby Telephone Cooperative Inc.	75-0220090	$172,029.18
15509	Pulaski White Rural Tel Co-Op	35-0934684	$170,402.25
13503	Custer Tele Co-Op Inc	82-0217396	$168,024.27
6608	Pine Drive Telephone Company	84-0582496	$167,672.43
42509	Valley Tele Coop Assoc., Inc.	46-0240919	$167,383.26
24558	Albany Mutual Tele Assn	41-0714402	$165,399.92
50534	Amery Telcom, Inc.	39-0129070	$165,063.68
14513	McDonough Tele Coop., Inc.	37-0728155	$163,109.23
42517	TrioTel Communications, Inc.	46-0232505	$160,274.68
4515	Central Arkansas Tel Co-Op Inc	71-0259315	$159,627.61
14511	Mid Century Tele Coop. Inc.	37-0696003	$157,346.52
26767	Midwest Data Center, Inc.	06-1667542	$156,458.25
15531	Washington County Rural Tel	35-0916880	$156,437.27
2619	Cordova Telephone Cooperative Inc.	92-0069166	$155,362.95
16507	Citizens Mutual Tele Cooperative	42-0181770	$154,757.23
50540	Lakeland Communications	39-0265610	$153,103.89
42533	CRST Telephone Authority	46-0324093	$149,750.15
35519	Dickey Rural Telephone Coop.	45-0230868	$149,401.34
37630	Panhandle Telecom. Systems Inc.	73-1182440	$148,257.95
13008	Direct Management Company	82-1858409	$146,919.87
6501	Wiggins Tele Assn.	84-0425446	$146,431.90
42908	Kingbrook Rural Water System Inc.	46-0322961	$143,951.11
15556	Swayzee Telephone Company, Inc.	35-0698720	$142,429.10
24540	Runestone Telecom Assoc.	41-0733426	$142,024.09
38603	Scio Mutual Tele. Assn.	93-0275980	$137,493.33
28718	Cambridge Telephone Company	91-1800653	$136,583.03
50568	La Valle Tele Cooperative	39-0927042	$136,323.86
47523	Pembroke Tele Cooperative	54-0855602	$135,345.58
16616	Breda Telephone Corporation	42-0895882	$134,748.96
47511	Buggs Island Tele Coop Inc.	54-6004683	$134,181.51
13576	Filer Mutual Telephone Company	82-0118625	$132,292.21

35721	Dakota Central Telecom. Coop.	45-0237471	$131,325.92
28543	Hemingford Coop Tele Co	47-0187450	$130,779.94
44631	Riviera Telephone Company Inc.	74-1530348	$130,753.41
24559	Benton Co-Op Tele Co.	41-0726084	$130,317.87
16520	Farmers Mutual Co-Op Tele Co	42-0246260	$127,984.61
42903	Big Sioux Community Water System	23-7302663	$127,483.08
37558	Canadian Valley Telephone Company	73-0742802	$126,119.77
16587	Iamo Telephone Co. Inc.	42-0864150	$124,931.70
45628	Direct Communications Cedar Valley	56-2334924	$123,275.46
50501	Clear Lake Telephone Company	39-0983114	$122,910.62
42900	South Dakota Assn Rur Water Sys	46-0340547	$119,350.83
50523	Farmers Independent Tele. Co.	39-0273283	$118,364.42
26656	New Florence Telephone Company	43-0604005	$117,407.33
13550	Direct Communications Rockland, Inc.	82-0305544	$117,367.24
10511	Northeast Florida Telephone Co	59-0798013	$116,985.90
50774	Wisconsin Rural Water Association, Inc.	39-1617442	$115,314.71
37551	Oklatel Communications, Inc.	73-0721379	$113,476.74
42904	Brookings-Deuel Rural Water System	46-0321763	$113,080.62
6530	Farmers Telephone Co.	84-0200825	$112,080.14
43771	North Central Security Services	62-1804397	$111,350.47
18645	Telecom Management Services, Inc.	27-2227371	$109,922.55
49523	Spruce Knob Seneca Rocks Tele Inc	23-7398391	$109,059.10
44827	Texas Plains Federal	75-0831357	$108,526.57
15627	Citizens Telephone Corporation	35-0740750	$107,621.38
42910	Minnehaha Community Water Corp.	46-0318665	$106,727.80
41515	Chesnee Telephone Company Inc.	57-0292840	$103,423.01
2646	Cordova Wireless Communications	91-1821677	$101,117.29
27525	Lincoln Telephone Co. Inc.	81-0159660	$99,404.87
11018	Southeast Fire and Burglar	36-4846773	$98,543.01
24620	Emily Cooperative Telephone Co.	41-1245260	$95,100.97
16743	Van Buren Telephone Company Inc.	42-0576230	$93,209.91
17740	Mutual Telephone Company	48-0312270	$91,947.38
36515	Minford Telephone Company	31-4148227	$90,962.73
44578	Coleman County Tele Coop. Inc.	75-0894391	$88,325.76
33549	Champlain Telephone Company	14-0558680	$87,226.59
18638	East Kentucky Network, LLC	61-1181339	$87,015.81
38521	Colton Telephone Company	93-0143500	$86,696.93
37667	Fred Williamson & Associates, Inc.	73-1221203	$86,248.61
14816	Comtech Solutions, LLC	37-1373309	$84,722.64
50606	Cochrane Coop Tele Co.	39-0274287	$83,918.30
28655	Nebraska Central Telephone Company	47-0248410	$82,637.01
42914	South Lincoln Rural Water System	46-0338181	$82,118.48
44576	Community Telephone Company Inc.	75-0988430	$79,001.45

42520	Santel Communications Coop	46-0236786	$77,460.67
10682	Florida Telecommunication Relay Inc	59-3073646	$73,802.02
42720	Santel Communications Cooperative	46-0236786	$70,685.73
28544	Plainview Telephone Co. Inc.	47-0467236	$68,652.47
33537	Germantown Tel. Company, Inc.	14-1386710	$67,647.21
28555	Henderson Coop. Tele. Company	47-0521692	$67,249.14
42605	South Dakota Telecommun Assoc	46-0319642	$67,163.06
23635	Hiawatha Communications, Inc.	38-2730020	$66,892.23
6527	Bijou Telephone Cooperative Assn	84-0160080	$66,335.58
35515	Inter-Community Tele Company	45-0454396	$64,667.64
26594	Rock Port Telephone Co	44-0421600	$64,612.36
17582	MoKan Dial Telephone Company	48-0674892	$64,291.52
44702	Livingston Telephone Company	74-0749500	$62,595.84
24602	Upsala Coop Tele Assn	41-0236620	$62,445.83
42916	Tripp County Water Users District	46-0343165	$62,400.85
36527	Farmers Mutual Telephone Co.	34-4230512	$61,903.25
26554	Kingdom Tele Co	51-0245855	$61,745.14
36631	Ridgeville Telephone Co.	34-4339580	$61,572.90
33529	Citizens Tele. Co. Of Hammond Inc.	15-0574629	$60,661.71
1009	Mon-Cre Tel. Co-Op, Inc.	63-0332310	$58,890.88
1519	Mon-Cre Tel. Co-Op, Inc.	63-0332310	$56,772.77
33701	New York State Telecomm. Assoc. Inc	14-1467733	$56,327.53
16563	Cooperative Tele Co.	42-0803307	$55,840.78
24683	Emily Coop. Telephone Co.	41-1245260	$55,388.10
38619	Eagle Telephone Company, Inc.	93-0794206	$54,012.26
27750	Missouri Valley Communications, Inc.	33-1015308	$52,351.02
15606	Sweetser Telephone Co. Inc.	35-0699050	$51,263.17
32517	La Jicarita Rural Tele Coop.	85-0193696	$49,181.69
36632	Sycamore Telephone Company	34-4370610	$49,088.65
16536	Farmers Telephone Company	42-0247630	$48,086.03
36513	The Ottoville Mutual Tele. Co.	34-4466080	$47,432.53
34601	Holland Poole Holland & Sanderson P A	56-1009466	$47,410.35
35501	North Dakota Assn Of Rur Tele Coops	45-6022545	$46,884.64
23531	Hiawatha Telephone Company	38-0858700	$46,710.99
24008	Garden Valley Innovations, LLC	81-4324437	$46,701.28
6606	Nunn Telephone	84-0388880	$46,360.67
14522	Hamilton County Tel Co-Op	37-0795454	$45,424.55
28548	K & M Telephone Company Inc.	47-0464499	$45,362.26
9639	Foundation For Rural Service	52-1889647	$44,451.70
50600	Bloomer Telephone Company	39-0170960	$43,464.51
42921	T-M Rural Water District	46-0370869	$41,728.10
6656	Rye Telephone, Inc.	20-4009422	$41,684.90
4545	Rice Belt Telephone Company, Inc.	71-0263323	$41,402.27

32717	La Jicarita Rural Telephone Coop.	85-0193696	$40,798.56
33510	Crown Point Tele. Corporation	14-1426471	$40,158.33
1549	Castleberry Telephone Company Inc.	63-0037970	$40,076.39
50754	Tech Com Inc.	39-1949838	$38,648.36
16541	Keystone Farmers Co-Op Tele Co	42-0750433	$36,718.61
16555	Brooklyn Mutual Telecommun Coop.	42-0155100	$35,895.97
38602	St. Paul Coop. Tele. Assoc.	93-0324966	$35,797.27
1601	Blountsville Telephone Company Inc	63-0326561	$34,929.79
36625	Glandorf Telephone Co Inc	34-4406494	$33,967.98
28653	Nebraska Telecomm Association	47-0250020	$33,763.28
26754	Kingdom Telephone Co.	51-0245855	$33,529.58
28551	Hershey Coop Tele Co	47-0382916	$33,206.48
14787	Illinois Telecommunications Assn.	37-1126810	$31,429.13
36526	Buckland Telephone Company	34-4197010	$31,096.52
50745	Chippewa Valley Cable, Inc.	39-1130532	$31,060.97
42923	Clark Rural Water Systems, Inc.	46-0345498	$30,408.59
44535	Rico Telephone Company	84-0996926	$29,986.86
33124	New York Access Billing, LLC	16-1570737	$29,977.27
3601	Alluvion Communications	20-5819142	$27,574.83
36503	Arthur Mutual Telephone Co.	34-4178710	$27,314.80
36601	Kalida Telephone Company	34-4274365	$26,617.33
14699	New Windsor Telephone Company Inc.	36-2418086	$26,405.77
14517	Egyptian Tel Co-Op Assn	37-0714439	$25,864.71
44897	Circle CC Ranch	71-0692157	$24,114.28
16519	Farmers Co-Op Tele Co	42-0654387	$23,821.98
24753	Brandon Communications	41-1765749	$23,568.88
46502	Topsham Tele Co Inc.	03-0162550	$23,102.47
23529	Ontonagon County Telephone Co.	38-0895660	$21,179.94
13719	Custer Tele Broadband Services, LLC	20-4036802	$21,040.39
37555	Oklahoma Western Telephone Co.	73-0724334	$19,955.89
35610	Telecom Training & Safety	45-6042229	$19,693.30
14622	Hamilton County Tele. Coop., Inc.	37-0795454	$19,564.61
36602	Fort Jennings Telephone Company	34-4459341	$19,401.43
38675	Eagle Valley Communications	93-1095504	$17,265.47
41500	SCTBA	57-0662668	$16,221.41
36634	The Vaughnsville Telephone Company	34-4382335	$15,263.13
6602	Peetz Cooperative Telephone Co.	84-0288960	$15,134.51
14808	Egyptian Telephone Co-Op Assn	37-0714439	$13,200.00
14705	Woodhull Community Tele. Co. Inc.	36-2218830	$11,412.92
6617	Roggen Telephone Cooperative	84-0434375	$11,016.68
26896	Kingdom Telecommunications Inc	43-1663632	$9,257.01
26653	Choctaw Telephone Company	43-1016073	$8,809.38
23551	Midway Telephone Company	38-1585794	$8,219.34

13707	Direct Communications (Star West)	82-0458869	$7,111.26
14555	La Harpe Telephone Company	37-0691336	$6,916.51
36521	Bascom Mutual Tele Co	34-4183110	$5,356.41
16599	Arcadia Tele Co-Op	42-0118520	$3,885.95
34523	Tri-County Tele Memb. Corp.	56-6012128	$2,540.18
51508	Tri-County Telephone Assn., Inc.	83-0178965	$2,205.04
41729	Hargray Communications Group	57-0812587	$1,699.60
18534	Coalfields Telephone	61-0513429	$1,490.64
16602	Central Scott Tele Co	42-0231890	$1,200.24
15524	Endeavor Communications	35-0978228	$806.08
51607	Tct West Inc.	83-0308080	$780.88
41529	Hargray Telephone Company Inc.	57-0342960	$776.40
41839	Hargray Wireless L.P.	57-1052162	$689.04
18601	Inter-Mountain Cable, Inc.	61-0659636	$430.74
18369	PDNS, LLC	61-1335110	$274.48
Total			$134,342,357.96

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SCHEDULE H (Form 5500)

Department of the Treasury
Internal Revenue Service

Department of Labor
Employee Benefits Security Administration

Pension Benefit Guaranty Corporation

Financial Information

This schedule is required to be filed under section 104 of the Employee Retirement Income Security Act of 1974 (ERISA), and section 6058(a) of the Internal Revenue Code (the Code).

▶ **File as an attachment to Form 5500.**

OMB No. 1210-0110

2018

This Form is Open to Public Inspection

For calendar plan year 2018 or fiscal plan year beginning and ending

A Name of plan	**B** Three-digit plan number (PN) ▶
C Plan sponsor's name as shown on line 2a of Form 5500	**D** Employer Identification Number (EIN)

Part I Asset and Liability Statement

1 Current value of plan assets and liabilities at the beginning and end of the plan year. Combine the value of plan assets held in more than one trust. Report the value of the plan's interest in a commingled fund containing the assets of more than one plan on a line-by-line basis unless the value is reportable on lines 1c(9) through 1c(14). Do not enter the value of that portion of an insurance contract which guarantees, during this plan year, to pay a specific dollar benefit at a future date. **Round off amounts to the nearest dollar.** MTIAs, CCTs, PSAs, and 103-12 IEs do not complete lines 1b(1), 1b(2), 1c(8), 1g, 1h, and 1i. CCTs, PSAs, and 103-12 IEs also do not complete lines 1d and 1e. See instructions.

Assets		(a) Beginning of Year	(b) End of Year
a Total noninterest-bearing cash	1a		
b Receivables (less allowance for doubtful accounts):			
(1) Employer contributions	1b(1)		
(2) Participant contributions	1b(2)		
(3) Other	1b(3)		
c General investments:			
(1) Interest-bearing cash (include money market accounts & certificates of deposit)	1c(1)		
(2) U.S. Government securities	1c(2)		
(3) Corporate debt instruments (other than employer securities):			
(A) Preferred	1c(3)(A)		
(B) All other	1c(3)(B)		
(4) Corporate stocks (other than employer securities):			
(A) Preferred	1c(4)(A)		
(B) Common	1c(4)(B)		
(5) Partnership/joint venture interests	1c(5)		
(6) Real estate (other than employer real property)	1c(6)		
(7) Loans (other than to participants)	1c(7)		
(8) Participant loans	1c(8)		
(9) Value of interest in common/collective trusts	1c(9)		
(10) Value of interest in pooled separate accounts	1c(10)		
(11) Value of interest in master trust investment accounts	1c(11)		
(12) Value of interest in 103-12 investment entities	1c(12)		
(13) Value of interest in registered investment companies (e.g., mutual funds)	1c(13)		
(14) Value of funds held in insurance company general account (unallocated contracts)	1c(14)		
(15) Other	1c(15)		

			(a) Beginning of Year	**(b)** End of Year
1d	Employer-related investments:			
	(1) Employer securities	1d(1)		
	(2) Employer real property	1d(2)		
e	Buildings and other property used in plan operation	1e		
f	Total assets (add all amounts in lines 1a through 1e)	1f		
	Liabilities			
g	Benefit claims payable	1g		
h	Operating payables	1h		
i	Acquisition indebtedness	1i		
j	Other liabilities	1j		
k	Total liabilities (add all amounts in lines 1g through1j)	1k		
	Net Assets			
l	Net assets (subtract line 1k from line 1f)	1l		

Part II Income and Expense Statement

2 Plan income, expenses, and changes in net assets for the year. Include all income and expenses of the plan, including any trust(s) or separately maintained fund(s) and any payments/receipts to/from insurance carriers. Round off amounts to the nearest dollar. MTIAs, CCTs, PSAs, and 103-12 IEs do not complete lines 2a, 2b(1)(E), 2e, 2f, and 2g.

	Income		**(a)** Amount	**(b)** Total
a	**Contributions:**			
	(1) Received or receivable in cash from: **(A)** Employers	2a(1)(A)		
	(B) Participants	2a(1)(B)		
	(C) Others (including rollovers)	2a(1)(C)		
	(2) Noncash contributions	2a(2)		
	(3) Total contributions. Add lines **2a(1)(A), (B), (C),** and line **2a(2)**	2a(3)		
b	**Earnings on investments:**			
	(1) Interest:			
	(A) Interest-bearing cash (including money market accounts and certificates of deposit)	2b(1)(A)		
	(B) U.S. Government securities	2b(1)(B)		
	(C) Corporate debt instruments	2b(1)(C)		
	(D) Loans (other than to participants)	2b(1)(D)		
	(E) Participant loans	2b(1)(E)		
	(F) Other	2b(1)(F)		
	(G) Total interest. Add lines **2b(1)(A)** through **(F)**	2b(1)(G)		
	(2) Dividends: **(A)** Preferred stock	2b(2)(A)		
	(B) Common stock	2b(2)(B)		
	(C) Registered investment company shares (e.g. mutual funds)	2b(2)(C)		
	(D) Total dividends. Add lines **2b(2)(A)**, **(B)**, and **(C)**	2b(2)(D)		
	(3) Rents	2b(3)		
	(4) Net gain (loss) on sale of assets: **(A)** Aggregate proceeds	2b(4)(A)		
	(B) Aggregate carrying amount (see instructions)	2b(4)(B)		
	(C) Subtract line **2b(4)(B)** from line **2b(4)(A)** and enter result	2b(4)(C)		
	(5) Unrealized appreciation (depreciation) of assets: **(A)** Real estate	2b(5)(A)		
	(B) Other	2b(5)(B)		
	(C) Total unrealized appreciation of assets. Add lines **2b(5)(A)** and **(B)**	2b(5)(C)		

		(a) Amount	(b) Total
(6) Net investment gain (loss) from common/collective trusts	2b(6)		
(7) Net investment gain (loss) from pooled separate accounts	2b(7)		
(8) Net investment gain (loss) from master trust investment accounts	2b(8)		
(9) Net investment gain (loss) from 103-12 investment entities	2b(9)		
(10) Net investment gain (loss) from registered investment companies (e.g., mutual funds)	2b(10)		
c Other income	2c		
d Total income. Add all **income** amounts in column (b) and enter total	2d		
Expenses			
e Benefit payment and payments to provide benefits:			
(1) Directly to participants or beneficiaries, including direct rollovers	2e(1)		
(2) To insurance carriers for the provision of benefits	2e(2)		
(3) Other	2e(3)		
(4) Total benefit payments. Add lines **2e(1)** through **(3)**	2e(4)		
f Corrective distributions (see instructions)	2f		
g Certain deemed distributions of participant loans (see instructions)	2g		
h Interest expense	2h		
i Administrative expenses: **(1)** Professional fees	2i(1)		
(2) Contract administrator fees	2i(2)		
(3) Investment advisory and management fees	2i(3)		
(4) Other	2i(4)		
(5) Total administrative expenses. Add lines **2i(1)** through **(4)**	2i(5)		
j Total expenses. Add all **expense** amounts in column (b) and enter total	2j		
Net Income and Reconciliation			
k Net income (loss). Subtract line **2j** from line **2d**	2k		
l Transfers of assets:			
(1) To this plan	2l(1)		
(2) From this plan	2l(2)		

Part III Accountant's Opinion

3 Complete lines 3a through 3c if the opinion of an independent qualified public accountant is attached to this Form 5500. Complete line 3d if an opinion is not attached.

a The attached opinion of an independent qualified public accountant for this plan is (see instructions):

(1) ☐ Unqualified **(2)** ☐ Qualified **(3)** ☐ Disclaimer **(4)** ☐ Adverse

b Did the accountant perform a limited scope audit pursuant to 29 CFR 2520.103-8 and/or 103-12(d)? ☐ Yes ☐ No

c Enter the name and EIN of the accountant (or accounting firm) below:

(1) Name: **(2)** EIN:

d The opinion of an independent qualified public accountant is **not attached** because:

(1) ☐ This form is filed for a CCT, PSA, or MTIA. **(2)** ☐ It will be attached to the next Form 5500 pursuant to 29 CFR 2520.104-50.

Part IV Compliance Questions

4 CCTs and PSAs do not complete Part IV. MTIAs, 103-12 IEs, and GIAs do not complete lines 4a, 4e, 4f, 4g, 4h, 4k, 4m, 4n, or 5. 103-12 IEs also do not complete lines 4j and 4l. MTIAs also do not complete line 4l.

During the plan year:		Yes	No	Amount
a Was there a failure to transmit to the plan any participant contributions within the time period described in 29 CFR 2510.3-102? Continue to answer "Yes" for any prior year failures until fully corrected. (See instructions and DOL's Voluntary Fiduciary Correction Program.)	4a			
b Were any loans by the plan or fixed income obligations due the plan in default as of the close of the plan year or classified during the year as uncollectible? Disregard participant loans secured by participant's account balance. (Attach Schedule G (Form 5500) Part I if "Yes" is checked.)	4b			

			Yes	No	Amount
c	Were any leases to which the plan was a party in default or classified during the year as uncollectible? (Attach Schedule G (Form 5500) Part II if "Yes" is checked.)	**4c**			
d	Were there any nonexempt transactions with any party-in-interest? (Do not include transactions reported on line 4a. Attach Schedule G (Form 5500) Part III if "Yes" is checked.)	**4d**			
e	Was this plan covered by a fidelity bond?	**4e**			
f	Did the plan have a loss, whether or not reimbursed by the plan's fidelity bond, that was caused by fraud or dishonesty?	**4f**			
g	Did the plan hold any assets whose current value was neither readily determinable on an established market nor set by an independent third party appraiser?	**4g**			
h	Did the plan receive any noncash contributions whose value was neither readily determinable on an established market nor set by an independent third party appraiser?	**4h**			
i	Did the plan have assets held for investment? (Attach schedule(s) of assets if "Yes" is checked, and see instructions for format requirements.)	**4i**			
j	Were any plan transactions or series of transactions in excess of 5% of the current value of plan assets? (Attach schedule of transactions if "Yes" is checked, and see instructions for format requirements.)	**4j**			
k	Were all the plan assets either distributed to participants or beneficiaries, transferred to another plan, or brought under the control of the PBGC?	**4k**			
l	Has the plan failed to provide any benefit when due under the plan?	**4l**			
m	If this is an individual account plan, was there a blackout period? (See instructions and 29 CFR 2520.101-3.)	**4m**			
n	If 4m was answered "Yes," check the "Yes" box if you either provided the required notice or one of the exceptions to providing the notice applied under 29 CFR 2520.101-3.	**4n**			

5a Has a resolution to terminate the plan been adopted during the plan year or any prior plan year? ☐ Yes ☐ No

If "Yes," enter the amount of any plan assets that reverted to the employer this year _____.

5b If, during this plan year, any assets or liabilities were transferred from this plan to another plan(s), identify the plan(s) to which assets or liabilities were transferred. (See instructions.)

5b(1) Name of plan(s)	**5b(2)** EIN(s)	**5b(3)** PN(s)

5c If the plan is a defined benefit plan, is it covered under the PBGC insurance program (See ERISA section 4021.)? ..... ☐ Yes ☐ No ☐ Not determined

If "Yes" is checked, enter the My PAA confirmation number from the PBGC premium filing for this plan year_____. (See instructions.)

Attachment to 2018 Form 5500
Schedule H, line 4i - Schedule of Assets (Held at End of Year)

Plan Name Retirement&Security Program for Employees of NTCA and Its Members **EIN:** 52-0741336
Plan Sponsor's Name National Telecommunications Cooperative Association **PN:** 333

(a)	(b) Identity of issue, borrower, lessor, or similar party	(c) Description of investment including maturity date, rate of interest, collateral, par, or maturity value.	(d) Cost	(e) Current value
	R&S and Savings Plan Master Trust	Master Trust	0	2,128,969,118