Form 5500	Annual Return/Report of Employee Benefit Plan	OMB Nos. 1210-0110 1210-0089
Department of the Treasury Internal Revenue Service Department of Labor Employee Benefits Security Administration Pension Benefit Guaranty Corporation	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.**	**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
- ☐ 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
- ☐ 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. . . . . ▶ ☐

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

Part II Basic Plan Information—enter all requested information

1a Name of plan
LLNS DEFINED BENEFIT PENSION PLAN

1b Three-digit plan number (PN) ▶ 003

1c Effective date of plan
10/01/2007

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)

LAWRENCE LIVERMORE NATIONAL SECURITY LLC

7000 EAST AVENUE L640
LIVERMORE, CA 94550

2b Employer Identification Number (EIN)
20-5624386

2c Plan Sponsor's telephone number
925-424-3711

2d Business code (see instructions)
541700

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.	10/11/2019	LISA MONTALVO
	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

LLNS BENEFITS AND INVESTMENT COMMITTEE

7000 EAST AVENUE
MAIL STOP L-640
LIVERMORE, CA 94550

3b Administrator's EIN
20-5624386

3c Administrator's telephone number
925-424-5085

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**	3605
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)**	2309
a(2) Total number of active participants at the end of the plan year	**6a(2)**	2124
b Retired or separated participants receiving benefits	**6b**	1184
c Other retired or separated participants entitled to future benefits	**6c**	247
d Subtotal. Add lines **6a(2)**, **6b**, and **6c**	**6d**	3555
e Deceased participants whose beneficiaries are receiving or are entitled to receive benefits.	**6e**	47
f Total. Add lines **6d** and **6e**	**6f**	3602
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**	0
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 1B 3F

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)
- (1) ☐ Insurance
- (2) ☐ Code section 412(e)(3) insurance contracts
- (3) ☒ Trust
- (4) ☐ General assets of the sponsor

9b Plan benefit arrangement (check all that apply)
- (1) ☐ Insurance
- (2) ☐ Code section 412(e)(3) insurance contracts
- (3) ☒ Trust
- (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) ☐ 0 **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)	Single-Employer Defined Benefit Plan Actuarial 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) and section 6059 of the Internal Revenue Code (the Code). ▶ **File as an attachment to Form 5500 or 5500-SF.**	**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
LLNS DEFINED BENEFIT PENSION PLAN

B Three-digit plan number (PN) ▶ 003

C Plan sponsor's name as shown on line 2a of Form 5500 or 5500-SF
LAWRENCE LIVERMORE NATIONAL SECURITY LLC

D Employer Identification Number (EIN)
20-5624386

E Type of plan: [X] Single [ ] Multiple-A [ ] Multiple-B

F Prior year plan size: [ ] 100 or fewer [ ] 101-500 [X] More than 500

Part I Basic Information

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

2 Assets:

a Market value	**2a**	3418708499
b Actuarial value	**2b**	3135813588

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	1041	1020953552	1020953552
b For terminated vested participants	276	115643728	115643728
c For active participants	2309	1456435146	1460835125
d Total	3626	2593032426	2597432405

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**	5.85 %
6 Target normal cost	**6**	89339685

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: 08/26/2019

ERIK A. HEISKANEN
Type or print name of actuary

17-07772
Most recent enrollment number

WILLIS TOWERS WATSON US LLC
Firm name

206-625-1125
Telephone number (including area code)

600 UNIVERSITY STREET
SUITE 3100
SEATTLE, WA 98101-1176
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)	0	122347999
8	Portion elected for use to offset prior year's funding requirement (line 35 from prior year)	0	0
9	Amount remaining (line 7 minus line 8)	0	122347999
10	Interest on line 9 using prior year's actual return of 20.93 %	0	25607436
11	Prior year's excess contributions to be added to prefunding balance:		
	a Present value of excess contributions (line 38a from prior year)		21362219
	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 6.06 %		1294550
	b(2) Interest on line 38b from prior year Schedule SB, using prior year's actual return		0
	c Total available at beginning of current plan year to add to prefunding balance		22656769
	d Portion of (c) to be added to prefunding balance		22656769
12	Other reductions in balances due to elections or deemed elections	0	0
13	Balance at beginning of current year (line 9 + line 10 + line 11d – line 12)	0	170612204

Part III Funding Percentages

14	Funding target attainment percentage	14	114.15%
15	Adjusted funding target attainment percentage	15	120.72%
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	123.09%
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
05/01/2019	23000000	0			
12/31/2018	0	22104955			
			Totals ►	18(b) 23000000	18(c) 22104955

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	0
b Contributions made to avoid restrictions adjusted to valuation date	19b	0
c Contributions allocated toward minimum required contribution for current year adjusted to valuation date	19c	21320957

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**	0
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**	

Part VII Reconciliation of Unpaid Minimum Required Contributions For Prior Years

28 Unpaid minimum required contributions for all prior years	**28**	0
29 Discounted employer contributions allocated toward unpaid minimum required contributions from prior years (line 19a)	**29**	0
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**	89339685
b Excess assets, if applicable, but not greater than line 31a	**31b**	89339685

32 Amortization installments:	Outstanding Balance	Installment
a Net shortfall amortization installment	0	0
b Waiver amortization installment	0	0

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**	0

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

36 Additional cash requirement (line 34 minus line 35)	**36**	0
37 Contributions allocated toward minimum required contribution for current year adjusted to valuation date (line 19c)	**37**	21320957
38 Present value of excess contributions for current year (see instructions)		
a Total (excess, if any, of line 37 over line 36)	**38a**	21320957
b Portion included in line 38a attributable to use of prefunding and funding standard carryover balances	**38b**	0
39 Unpaid minimum required contribution for current year (excess, if any, of line 36 over line 37)	**39**	0
40 Unpaid minimum required contributions for all years	**40**	0

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 D (Form 5500)	DFE/Participating Plan Information	OMB No. 1210-0110
Department of the Treasury Internal Revenue Service Department of Labor Employee Benefits Security Administration	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 LLNS DEFINED BENEFIT PENSION PLAN	**B** Three-digit plan number (PN) ▶ 003
C Plan or DFE sponsor's name as shown on line 2a of Form 5500 LAWRENCE LIVERMORE NATIONAL SECURITY LLC	**D** Employer Identification Number (EIN) 20-5624386

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: LLNS & TRIAD NS DB PLAN GROUP TRUST

b Name of sponsor of entity listed in (a): LLNS, LLC & TRIAD NATIONAL SECURITY, LLC

c EIN-PN 26-6431956-001	**d** Entity code E	**e** Dollar value of interest in MTIA, CCT, PSA, or 103-12 IE at end of year (see instructions) 3143193358

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)	Financial 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), and section 6058(a) of the Internal Revenue Code (the Code). ▶ **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
LLNS DEFINED BENEFIT PENSION PLAN

B Three-digit plan number (PN) ▶ 003

C Plan sponsor's name as shown on line 2a of Form 5500
LAWRENCE LIVERMORE NATIONAL SECURITY LLC

D Employer Identification Number (EIN)
20-5624386

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)	23000000	23000000
(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)	3396051730	3143193358
(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	3419051730	3166193358

Liabilities

g	Benefit claims payable	1g		
h	Operating payables	1h	1995327	1795276
i	Acquisition indebtedness	1i		
j	Other liabilities	1j		
k	Total liabilities (add all amounts in lines 1g through1j)	1k	1995327	1795276

Net Assets

l	Net assets (subtract line 1k from line 1f)	1l	3417056403	3164398082

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)	23000000	
	(B) Participants	2a(1)(B)	22104955	
	(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)		45104955
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)		0
	(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)		
(9) Net investment gain (loss) from 103-12 investment entities	2b(9)		-224418267
(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		-179313312

Expenses

e Benefit payment and payments to provide benefits:			
(1) Directly to participants or beneficiaries, including direct rollovers	2e(1)	73345009	
(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)		73345009
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)		0
j Total expenses. Add all **expense** amounts in column (b) and enter total	2j		73345009

Net Income and Reconciliation

k Net income (loss). Subtract line **2j** from line **2d**	2k		-252658321
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: MOSS ADAMS **(2)** EIN: 91-0189318

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		500000
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	
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 4165032. (See instructions.)

SCHEDULE R (Form 5500)	Retirement Plan 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 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.**	**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
LLNS DEFINED BENEFIT PENSION PLAN

B Three-digit plan number (PN) ▶ 003

C Plan sponsor's name as shown on line 2a of Form 5500
LAWRENCE LIVERMORE NATIONAL SECURITY LLC

D Employer Identification Number (EIN)
20-5624386

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): 20-5624386 ____________

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** 0

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: 46.0 % Investment-Grade Debt: 32.0 % High-Yield Debt: 0.0 % Real Estate: 11.0 % Other: 11.0 %

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):

Report of Independent Auditors and
Financial Statements

LLNS Defined Benefit Pension Plan

December 31, 2018 and 2017

MOSSADAMS

Table of Contents

MOSSADAMS

Report of Independent Auditors

To the Plan Administrator
LLNS Defined Benefit Pension Plan

Report on Financial Statements

We were engaged to audit the accompanying financial statements of the LLNS Defined Benefit Pension Plan (the Plan), 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.

Auditor's Responsibility

Our responsibility is to express an opinion on the financial statements based on conducting the audits in accordance with auditing standards generally accepted in the United States of America. Because of the matter described in the Basis of Disclaimer of Opinion paragraph, however, we were not able to obtain sufficient appropriate audit evidence to provide a basis for an audit opinion.

Basis for Disclaimer of Opinion

As permitted by 29 CFR 2520.103-8 of the Department of Labor's (DOL's) Rules and Regulations for Reporting and Disclosure under the Employee Retirement Income Security Act of 1974 (ERISA), the plan administrator instructed us not to perform, and we did not perform, any auditing procedures with respect to the information summarized in Note 7, which was certified by The Bank of New York Mellon/BNY Mellon, N.A., the trustee of the Plan, except for comparing such information with the related information included in the financial statements. We have been informed by the plan administrator that the trustee holds the Plan's investment assets and executes investment transactions. The plan administrator has obtained a certification from the trustee as of and for the years ended December 31, 2018 and 2017, that the information provided to the plan administrator by the trustee is complete and accurate.

Disclaimer of Opinion

Because of the significance of the matter described in the Basis for Disclaimer of Opinion paragraph, we have not been able to obtain sufficient appropriate audit evidence to provide a basis for an audit opinion on the financial statements. Accordingly, we do not express an opinion on these financial statements.

Report on Form and Content in Compliance with DOL Rules and Regulations

The form and content of the information included in the financial statements, other than that derived from the information certified by the trustee, have been audited by us in accordance with auditing standards generally accepted in the United States of America and, in our opinion, are presented in compliance with the DOL's Rules and Regulations for Reporting and Disclosure under ERISA.

Moss Adams LLP

Campbell, California
October 9, 2019

Financial Statements

LLNS Defined Benefit Pension Plan
Statements of Net Assets Available for Benefits
December 31, 2018 and 2017

	2018	2017
Assets:		
Investments, at fair value:		
Participation in the LLNS/Triad Group Trust	$ 3,143,193,358	$ 3,396,051,730
Receivables:		
Employer's contribution	23,000,000	23,000,000
Total receivables	23,000,000	23,000,000
Total assets	3,166,193,358	3,419,051,730
Liabilities:		
Accrued expenses	1,795,276	1,995,327
Net assets available for benefits	$ 3,164,398,082	$ 3,417,056,403

See accompanying notes.

	2018	2017
Additions (reductions) to net assets attributed to:		
Investment income (loss):		
Participation in the LLNS/Triad Group Trust	$ (214,316,376)	$ 599,797,190
Contributions:		
Employer's	23,000,000	23,000,000
Participants'	22,104,955	22,254,344
	45,104,955	45,254,344
Total additions (reductions)	(169,211,421)	645,051,534
Deductions from net assets attributed to:		
Benefits paid to participants	73,345,009	59,157,207
Administrative expenses	10,101,891	11,532,801
Total deductions	83,446,900	70,690,008
Net increase (decrease) in net assets	(252,658,321)	574,361,526
Net assets available for benefits:		
Beginning of year	3,417,056,403	2,842,694,877
End of year	$ 3,164,398,082	$ 3,417,056,403

See accompanying notes.

NOTE 1 – THE PLAN AND ITS SIGNIFICANT ACCOUNTING POLICIES

General – The following description of the LLNS Defined Benefit Pension Plan (the Plan), provides only general information. Participants should refer to the plan document for a more complete description of the Plan's provisions.

The Plan is a defined benefit plan that was established on October 1, 2007, by Lawrence Livermore National Security, LLC (the Company), to provide benefits to eligible employees, as defined in the Plan document. The Plan is currently designed to be qualified under the applicable requirements of the Internal Revenue Code (the Code) as amended, and the provisions of the Employee Retirement Income Security Act of 1974 (ERISA).

The Plan is a closed plan and participants under the Plan include employees of the Company who on September 30, 2007, were employed by or on an approved leave of absence from employment with the University of California, and were participating in the University of California Retirement Plan (UCRP) or in an employment classification eligible to become a participant in the Plan, and who did not elect retired or inactive vested status in the UCRP, and who made a Choice Election to accept employment with the Company on October 1, 2007, in accordance with the terms of Total Compensation Package 1 (TCP1), as described in Section H35(d)(1) of Contract Number DE-AC52-07NA27344 between the Company and the Department of Energy/National Nuclear Security Administration related to the operation of the Lawrence Livermore National Laboratory.

On August 1, 2008, the Lawrence Livermore National Security, LLC, and Triad National Security, LLC (Triad) (formerly Los Alamos National Security, LLC) Defined Benefit Pension Plan Group Trust (the Group Trust) was formed from the pension assets of the Plan and the Triad Defined Benefit Pension Plan. In the context of pension plans, a group trust is a separate trust which invests together some or all of the assets of "participating trusts." The Plan is one participating trust and the Triad Defined Benefit Pension Plan is the other participating trust. The assets are commingled for investment purposes only at the direction of the participating trusts, and are not commingled to pay plan benefits. The Company and Triad will continue to sponsor separate qualified pension plans and maintain separate participating trusts. As of December 31, 2018 and 2017, the Plan's interest in the Group Trust was 40.93% and 41.23%, respectively.

The pooling of assets of tax exempt trusts does not affect the tax exempt status of the participating trusts or the qualified status of their related plans, according to Internal Revenue Service Revenue Ruling (Rev. Rul.) 81-100. According to Rev. Rul. 81-100, each participating trust remains fully separate and independent from the other participating trust.

Administration – The Company has appointed the Benefits and Investment Committee (the Committee) to manage the operation and administration of the Plan. The Company contracted with The Bank of New York Mellon/BNY Mellon N. A. (Mellon), to act as the trustee for the Plan. The Company contracted with Willis Towers Watson (Towers Watson) to act as the Plan's actuary, and Aon Hewitt to act as the third-party administrator. Substantially all expenses incurred for administering the Plan are paid out of the Plan, unless paid by the Company.

Vesting – The Plan provides that pension benefits vest to participants based on years of service as follows: less than five years of credited service, 0%; five or more years of credited service, 100%. Regardless of service, participants are always 100% vested in their contributions.

Pension benefits – Benefits become payable to the participant after five years of credited service and:

(a) electing early retirement upon attaining age 50; or

(b) electing normal retirement upon attaining age 60; or

(c) upon actual retirement if later than age 60.

For married participants who do not elect otherwise, benefits will be paid on the basis of a 50% joint and contingent annuity, as stipulated by ERISA, and will be the amount determined under the benefit formula stated in the Plan multiplied by the appropriate factor. If a participant is unmarried, benefits will be paid on the basis of a Single Life Annuity and will be for the amount determined under the Plan's benefit formula.

Death and disability benefits – There are no benefits payable during a period of disability prior to retirement under the Plan. The surviving spouse of a participant who has provided at least two years of credited service will be eligible to receive a survivor annuity and the designated beneficiary of such participant will receive a one-time single-sum basic death benefit from the Plan.

Basis of accounting – The financial statements of the Plan are prepared on the accrual method of accounting in accordance with accounting principles generally accepted in the United States of America.

Estimates – The preparation of financial statements in conformity with accounting principles generally accepted in the United States of America requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and changes therein, disclosure of contingent assets and liabilities, and the actuarial present value of accumulated Plan benefits at the date of the financial statements. Actual results could differ from those estimates.

Investment valuation and income recognition – The Plan's investments are held in the Group Trust by Mellon and investment elections are based solely on the instructions received from the Committee. The investments held in the Group Trust are reported at fair value. The Plan's trustee, Mellon, certifies the fair market value of all investments. If available, quoted market prices are used to value investments. Fair value is the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. See Note 2 for discussion of fair value measurements.

The Group Trust records purchases and sales of securities on a trade date basis. Interest income is recorded on the accrual basis. Dividends are recorded on the ex-dividend date. Net appreciation (depreciation) reported by the Group Trust includes the gains and losses of investments bought or sold as well as held during the year. The Plan presents its share of the investment income in the Group Trust in the statements of changes in net assets available for benefits.

Payment of benefits – Benefit payments to participants are recorded upon distribution.

Income taxes – The Plan has received a favorable determination letter dated February 6, 2018. The plan administrator believes that the Plan is operated in accordance with, and qualifies under, the applicable requirements of the Code and related state statutes, and that the trust, which forms a part of the Plan, is exempt from federal income and state franchise taxes.

In accordance with guidance on accounting for uncertainty in income taxes (ASC 740-10), management evaluated the Plan's tax positions and does not believe the Plan has any uncertain tax positions that require disclosure or adjustment to the financial statements. The Plan is subject to routine audits by taxing jurisdictions; however, there are currently no audits for any tax periods in progress.

Risks and uncertainties – The Plan invests its assets in the Group Trust. The Group Trust utilizes various investment securities. Investment securities 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.

Plan contributions, if any, and the actuarial present value of accumulated Plan 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 reasonably possible that changes in these estimates and assumptions in the near term would be material to the financial statements.

NOTE 2 – FAIR VALUE MEASUREMENTS

The fair value measurements standard establishes a framework for measuring fair value. That framework provides a 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) and the lowest priority to unobservable inputs (Level 3). The three levels of the fair value hierarchy under the standard are described below:

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

Level 2 – Inputs to the valuation methodology include:

- Quoted market 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; and
- Inputs that are derived principally from or corroborated by observable market data by correlation or other means.

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 value measurement.

The asset's 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.

Following are descriptions of the valuation techniques used for assets held by the Group Trust measured at fair value. There have been no changes in the techniques used at December 31, 2018 and 2017.

Common stocks: Shares of common stock are valued at the closing price reported on the active market on which the individual securities are traded.

Registered investment companies: Valued at the daily closing price as reported by the fund. Mutual funds held by the Plan are open-end mutual funds that are registered with the U.S. Securities and Exchange Commission. These funds are required to publish their daily net asset value (NAV) and to transact at that price. The mutual funds held by the Plan are deemed to be actively traded.

Common/collective trusts: Units held in common/collective trusts (CCT) are valued using the NAV practical expedient of the CCT as reported by the CCT managers. The NAV practical expedient is based on the fair value of the underlying assets owned by the CCT, minus its liabilities and then divided by the number of units outstanding. Certain CCTs on the Group Trust's investments have redemption restrictions and requires written notice ranging from 10 business days to 45 business days.

Preferred corporate stocks, government securities, government short term investment funds (interest-bearing cash and cash equivalents), and other investments listed on a national securities exchange and over-the-counter securities: Valued at the last reported sale price on the valuation date or, if no sales are reported for that day, the last published sale price.

Corporate debt instruments: Valued based on market values quoted by dealers who are market makers in these securities, by independent pricing services or by a methodology approved by Mellon.

Partner/joint venture interests: Valued using the market approach at the NAV practical expedient. NAV is used as a practical expedient to estimate fair value and which represents the Group Trust's proportionate share of the estimated fair value of the underlying net assets of the partner/joint venture interests. Certain partner/joint venture interests on the Group Trust's investments have redemption restrictions and requires written notice ranging from 15 business days to 24 months. One partner/joint venture interest has an unfunded capital commitment in the amount of $45,000,000.

Asset-backed securities included in securities lending collateral: These are bonds or notes backed by financial assets. Institutional observable inputs are used with an income valuation technique provided by outside vendors.

Certificates of deposit, repurchase agreements, and commercial paper included in securities lending collateral are valued using a market approach and are carried at cost, which approximates fair value.

Other investments: Other investments mainly consists of domestic and foreign bonds and U.S. treasury bonds. The fair value of certain bonds are valued at the closing price reported in an active market in which the individual security is traded. Other bonds are valued based on yields currently available on comparable securities of issuers with similar credit ratings. When quoted prices are not available for identical or similar bonds, the bond is valued under a discounted cash flows approach that maximize observable inputs, such as current yields or similar instruments, but includes adjustments for certain risks that may not be observable, such as credit and liquidity risks.

The methods described above may produce a fair value calculation that may not be indicative of net realized value or reflective of future fair values. Furthermore, while the Group Trust believes its valuation methods are appropriate and consistent with other market participants, the use of different methodologies or assumptions to determine the fair value of certain financial instruments could result in a different fair value measurement at the reporting date.

The following tables set forth by level, within the fair value hierarchy, the investments of the Group Trust at fair value as of December 31, 2018 and 2017:

	2018			
	Level 1	Level 2	Level 3	Total
Assets:				
Interest-bearing cash	$ 1,209,800	$ 560,909	$ -	$ 1,770,709
Corporate stock - common	1,866,762,770	-	-	1,866,762,770
U.S. and other government securities	953,347,585	23,926,067	-	977,273,652
Corporate stock - preferred	1,593,903	1,047,062	-	2,640,965
Corporate debt instruments - preferred	-	636,673,598	-	636,673,598
Corporate debt instruments	-	560,121,745	-	560,121,745
Other investments	95,159,389	98,016,632	-	193,176,021
Registered investment companies	473,592,775	-	-	473,592,775
Security lending collateral	1,076,788	622,165,475	-	623,242,263
Total assets in the fair value hierarchy	$ 3,392,743,010	$ 1,942,511,488	$ -	5,335,254,498
Investments measured at NAV practical expedient				2,971,678,498
Investments at fair value				$ 8,306,932,996
Liabilities:				
Obligation to return collateral under security lending agreement	$ 1,019,243	$ 622,455,162	$ -	$ 623,474,405

	2017			
	Level 1	Level 2	Level 3	Total
Assets:				
Interest-bearing cash	$ 3,724,528	$ -	$ -	$ 3,724,528
Corporate stock - common	2,705,989,047	37	-	2,705,989,084
U.S. and other government securities	1,101,992,731	26,007,449	-	1,128,000,180
Corporate stock - preferred	2,210,629	1,539,225	-	3,749,854
Corporate debt instruments - preferred	-	742,741,376	-	742,741,376
Corporate debt instruments	-	688,094,979	-	688,094,979
Other investments	2,651,417	121,543,690	-	124,195,107
Registered investment companies	663,205,465	-	-	663,205,465
Security lending collateral	899,977	1,077,451,333	-	1,078,351,310
Total assets in the fair value hierarchy	$ 4,480,673,794	$ 2,657,378,089	$ -	7,138,051,883
Investments measured at NAV practical expedient				2,074,509,061
Investments at fair value				$ 9,212,560,944
Liabilities:				
Obligation to return collateral under security lending agreement	$ 899,977	$ 1,077,713,124	$ -	$ 1,078,613,101

NOTE 3 – PARTY-IN-INTEREST TRANSACTIONS

Certain investments and securities lending activities in the Group Trust are managed by Mellon. Any purchases and sales of these funds are performed in the open market at fair value. Such transactions, while considered party-in-interest transactions under ERISA regulations, are permitted under the provisions of the Plan and are specifically exempt from the prohibition of party-in-interest transactions under ERISA.

NOTE 4 – ACTUARIAL PRESENT VALUE OF ACCUMULATED PLAN BENEFITS

Accumulated Plan benefits represent the estimated future periodic payments, including lump-sum distributions, under the Plan's provisions that are attributable to services rendered by employees through the valuation date. Accumulated Plan benefits include benefits expected to be paid to:

(a) retired or terminated employees or their beneficiaries; or

(b) beneficiaries of employees who have died; or

(c) present employees or their beneficiaries.

Benefits under the Plan are based on years of service and benefit credit rates. The accumulated Plan benefits for active employees are based on years of service and benefit credit rates on the date at which the benefit information is presented (valuation date). Benefits payable under all circumstances (retirement, death, disability, and termination of employment) are included, to the extent they are deemed attributable to employee service rendered to the valuation date.

The actuarial present value of accumulated Plan benefits is determined by the Plan's actuary, Towers Watson, and is that amount that results from applying actuarial assumptions to adjust the accumulated Plan benefits to reflect the time value of money (through discounts for interest) and the probability of payment (by means of decrements, such as for death, disability, withdrawal, or retirement) between the valuation date and the expected date of payment. The significant actuarial assumptions used in the valuations as of January 1, 2018 (beginning of the Plan year), are as follows:

Interest	6.5%
Mortality assumption:	The RP-2014 Employee and Annuitant Mortality Table for Males and Females adjusted backwards to 2006 with MP-2014 and projected generationally forward using sex-distinct Scale MP-2017
Retirement age:	Retirement rate varies from 50 to 75 years old, average age 62

The foregoing actuarial assumptions are based on the presumption that the Plan will continue. Were the Plan to terminate, different actuarial assumptions and other factors might be applicable in determining the actuarial present value of accumulated Plan benefits.

The actuarial present value of accumulated Plan benefits at January 1, 2018, is as follows:

Actuarial present value of accumulated	
Plan benefits:	
Vested benefits:	
Participants currently receiving payments	$ 969,087,875
Vested benefits for other participants	1,482,001,358
Total vested Plan benefits	2,451,089,233
Nonvested benefits	2,655,993
Total actuarial present value of accumulated Plan benefits	$ 2,453,745,226

The change in the actuarial present value of accumulated Plan benefits at January 1, 2018, is as follows:

Actuarial present value of Plan benefits, January 1, 2017	$ 2,204,801,316
Increase (decrease) during the year attributable to:	
Benefits accumulated	94,359,230
Actuarial losses	40,150,534
Decrease in discount period	147,522,826
Benefits paid	(59,157,207)
Assumption changes	26,068,527
	248,943,910
Actuarial present value of accumulated Plan benefits, January 1, 2018	$ 2,453,745,226

The following assumptions were changed since January 1, 2017 (the last valuation date):

- The mortality assumptions changed from the RP-2014 Employee and Annuitant Mortality Table for Males and Females adjusted backwards to 2006 with MP-2014 and projected generationally forward using sex-distinct scale MP-2016 to the RP-2014 Employee and Annuitant Mortality Table for Males and Females adjusted backwards to 2006 with MP-2014 and projected generationally forward using sex-distinct Scale MP-2017.

NOTE 5 – FUNDING POLICY

Participant contributions – The Plan requires mandatory participant contributions equal to 7% of eligible compensation each pay period.

Employer contributions – The Plan's funding policy is for the Company to contribute an amount that will meet or exceed the ERISA minimum funding requirement. Annual contributions, if any, are determined by the Plan's actuary. The Plan has met the minimum funding amounts as well as the specified timing requirements required by ERISA and the Code for the years ended December 31, 2018 and 2017.

NOTE 6 – PARTICIPATION IN THE GROUP TRUST

The Plan's participation in the Group Trust reported on the statements of net assets consists of the investments held at fair value, certain receivables, and liabilities that are not reported separately on the Plan's financial statements as follows at December 31:

	2018	2017
Investments, at fair value (Note 2)	$ 8,306,932,996	$ 9,212,560,944
Due from investment managers	263,989,830	226,447,430
Obligation to return collateral under security lending agreement	(623,474,405)	(1,078,163,101)
Due to investment managers	(334,831,203)	(204,940,981)
Net assets allocable to the participating Plans	$ 7,612,617,218	$ 8,155,904,292
Allocated to the Triad Defined Benefit Pension Plan	$ 4,469,423,860	$ 4,759,852,562
Allocated to the LLNS Defined Benefit Pension Plan	3,143,193,358	3,396,051,730
	$ 7,612,617,218	$ 8,155,904,292

The Plan's participation in the Group Trust reported on the statements of changes in net assets consists of investment income as follows for the years ended December 31:

	2018	2017
Investment income (loss)		
Net appreciation (depreciation) in fair value of investments	$ (649,172,290)	1,265,448,877
Interest	98,535,894	91,236,500
Dividends	59,493,830	61,126,316
Other investment income (loss)	(22,305,856)	97,848,162
Total investment income (loss) reported by the Group Trust	$ (513,448,422)	$ 1,515,659,855
Allocated to the Triad Defined Benefit Pension Plan	(299,132,046)	915,862,665
Allocated to the LLNS Defined Benefits Pension Plan	(214,316,376)	599,797,190
	$ (513,448,422)	$ 1,515,659,855

NOTE 7 – CERTIFIED INFORMATION

The plan administrator has elected the method of compliance permitted by 29 CFR 2520.103-8 of the Department of Labor's Rules and Regulations for Reporting and Disclosure under ERISA. Accordingly, Mellon, the trustee of the Plan, has certified to the completeness and accuracy of:

- The Plan's participation in the Group Trust reflected on the accompanying statements of net assets available for benefits as of December 31, 2018 and 2017.
- The Plan's interest in the investment income (loss) in the Group Trust reflected on the accompanying statements of changes in net assets available for benefits for the years ended December 31, 2018 and 2017.
- Investment information, investment related receivables and liabilities, and investment income (loss) disclosed related to the Group Trust in Note 6 as of and for the years ended December 31, 2018 and 2017.

NOTE 8 – FINANCIAL INSTRUMENTS WITH OFF-BALANCE SHEET RISK

In the normal course of operations, assets in the Group Trust are invested in financial instruments that may give rise to off-balance sheet risk. These instruments involve, in varying degrees, elements of credit and market risk in excess of the amounts recognized on the statements of net assets available for benefits. The notional value provides a measure of the Group Trust's involvement in such instruments but is not indicative of potential loss. The intent is to use these financial instruments to reduce, rather than increase, market risk. For 2018 and 2017, these financial instruments consisted of futures contracts and are included under "Other investments" on the statements of net assets available for benefits.

NOTE 9 – DERIVATIVE FINANCIAL INSTRUMENTS

The Committee adopted a "Statement of Investment Policy" that applies to the Group Trust. This statement provides guidelines for certain plan investment managers to allow the use of derivative instruments to achieve investment objectives. It is the investment managers' responsibility to understand the potential impact of derivative instruments on the total portfolio under various market risk scenarios and to comply with these guidelines. As with other marketable securities, all derivatives are recorded at fair value.

Derivatives are subject to risks which include the possible inability of the counterparty to meet the terms of the contracts (counterparty risk), and adverse market movements (market risk).

During the years ended December 31, 2018 and 2017, the following types of derivative instruments were used in the Group Trust:

Foreign currency contracts – The Group Trust's global equity portfolio includes equity securities denominated in foreign currencies. The Committee has retained an investment manager to hedge a portion of the foreign currency risk associated with these securities. Consistent with this strategy, the investment manager enters into forward foreign currency agreements to exchange foreign currencies at a specified future date and at a specified rate.

The trustee's commitments to buy and sell foreign currencies on behalf of the Group Trust totaled approximately $211,106,000 and $184,019,000 at December 31, 2018 and 2017, respectively. Commitments at December 31, 2018, expire through December 2019.

Futures contracts – The Group Trust enters into futures contracts in the normal course of its investing activities to manage market risk associated with the Group Trust's fixed income investments and to achieve overall investment portfolio objectives. During 2018 and 2017, futures contracts consisted of U.S. Treasury securities and these investments were made in accordance with the guidelines set forth by the Committee. The credit risk associated with these contracts is minimal because they are traded on organized exchanges. The Group Trust's notional exposure related to these futures contracts was approximately $2,097,813,000 and $789,021,000 for 2018 and 2017, respectively.

During the period the contract is open, changes in the value of the contract are recognized as unrealized gains or losses by daily marking to market the contract to reflect the market value of the contract at the end of each day's trading. The Group Trust receives from or pays to the broker an amount equal to the daily fluctuation in the market value of the contract known as margin variation, which is recognized in the net appreciation in fair value of investments.

The Group Trust is exposed to credit loss in the event of nonperformance by a counterparty to its contractual obligations. Based on the extent of the investment in these derivatives with any one counterparty, the Companies have determined that the risk of loss to the Group Trust in the event of nonperformance by a counterparty is not significant. The Group Trust does not anticipate nonperformance by a counterparty.

In the Group Trust's statements of net assets, all derivative financial instruments are carried at fair value. The fair value of the Group Trust's derivative financial instruments are as follows:

Asset Derivatives December 31, 2018		Liability Derivatives December 31, 2018		
Type of Exposure	Fair Value	Type of Exposure	Fair Value	Number of Open Contracts
Cash Equivalents		*Cash Equivalents*		
Foreign Currency	$ 1,209,843	Foreign Currency	$ 43	51
Other Assets		*Other Assets*		
Futures	$ 103,386,627	Futures	$ 8,227,238	23

Asset Derivatives December 31, 2017		Liability Derivatives December 31, 2017		
Type of Exposure	Fair Value	Type of Exposure	Fair Value	Number of Open Contracts
Cash Equivalents		*Cash Equivalents*		
Foreign Currency	$ 1,302,774	Foreign Currency	$ 1,387	50
Other Assets		*Other Assets*		
Futures	$ 2,860,662	Futures	$ 209,245	25

NOTE 10 – SECURITIES LENDING

The Group Trust participates in a securities lending program with the trustee. The program allows the trustee to lend securities, which are assets of the Group Trust, to approved borrowers. The trustee requires the borrowers, pursuant to a security loan agreement, to deliver collateral having a market value of not less than the collateral requirement. For U.S. securities, the collateral requirement is 102% of the fair market value of the securities lent. For foreign securities, the collateral requirement is 105% of the fair market value of the securities lent. The Group Trust bears the risk of loss with respect to any unfavorable change in fair value of the invested cash collateral. However, the borrowers bear the risk of loss related to the decrease in the fair value of the noncash collateral and, therefore, would have to deliver additional securities to maintain the required collateral. In the event that the securities lent are not returned by the borrower and the collateral proceeds are insufficient to replace any of the loaned securities, the trustee will pay such amounts as are necessary to make the Group Trust whole. The fair value of the investment of cash collateral received pursuant to securities lending transactions is reflected on the statement of net assets available for benefits as an asset and the obligation to return the amount received is reflected as a liability. As of December 31, 2018 and 2017, collateral for securities on loan from the Group Trust included reinvested collateral in accordance with the guidelines in the “Securities Lending Authorization Agreement” (the Lending Agreement).

Non-cash collateral of approximately $62,871,000 and $72,317,000 received for securities on loan at December 31, 2018 and 2017, respectively, consisted of sovereign debt securities as in accordance with the Lending Agreement held by the trustee on behalf of the Plan. Non-cash collateral is not included with the collateral balance included in the statement of net assets available for benefits because it may not be sold or repledged.

The Group Trust and the trustee receive a percentage of the net income derived from the securities lending activities based on the type of securities received as collateral. Income earned during 2018 and 2017 was approximately $3,318,000 and $3,536,000, respectively, which is included in other investment income (loss), net of trustee fees.

NOTE 11 – PLAN TERMINATION OR MODIFICATION

With prior approval of the National Nuclear Security Administration, the Company can terminate the Plan, subject to the provisions of Federal Law. Upon the termination of the Plan, partially or in its entirety, the rights of all affected participants to benefits accrued to the date of such termination, to the extent funded as of such date, are nonforfeitable. Provided, however, that upon termination of the Plan, the Company’s obligation to make further contributions to the Plan on behalf of affected participants shall cease, except for any additional contribution that may be necessary to meet the minimum funding or other requirements of ERISA.

In the event of a complete termination of the Plan, funds will be distributed to the extent available, in the following order:

- Accrued benefits derived from mandatory employee contributions.

- Annuity benefits that were in pay status before the beginning of the three-year period ending on the termination date, and those annuity benefits that could have been in pay status for participants who, before the beginning of the three-year period ending on the termination date, had reached their earliest retirement date as defined by the Pension Benefit Guaranty Corporation (the PBGC).

- Other vested benefits insured by the PBGC up to the applicable limits.
- All other vested benefits.
- All other participants.

Any residual assets of the Plan will be distributed to the Company, provided that all liabilities of the Plan have been paid.

Certain benefits under the Plan are insured by the PBGC. Generally, the PBGC guarantees most vested normal age retirement benefits, early retirement benefits, and certain disability and survivor's benefits. However, the PBGC does not guarantee all types of benefits under the Plan and the amount of benefit protection is subject to certain limitations. Vested benefits under the Plan are guaranteed at the level in effect on the date of termination. There is a statutory ceiling, which is adjusted periodically, on the amount of a participant's monthly benefit that the PBGC guarantees. Whether all participants receive their benefits should the Plan terminate at some future time will depend on the sufficiency, at that time, of the Plan's net assets to provide for accumulated benefit obligations and may also depend on the financial condition of the Plan's sponsor and the level of benefits guaranteed by the PBGC.

NOTE 12 – SUBSEQUENT EVENTS

The Plan has evaluated subsequent events through October 9, 2019, which is the date the financial statements were available to be issued.

MOSSADAMS

Schedule SB, Line 26

Schedule of Active Participant Data as of January 1, 2018

Number and average plan compensation limited by IRC §401(a)(17) distributed by attained age and attained years of credited service

	Attained Years of Credited Service[1]										
	Under 1	**1-4**	**5-9**	**10-14**	**15-19**	**20-24**	**25-29**	**30-34**	**35-39**	**40 & Over**	**Total**
Under 25	0	0	0	0	0	0	0	0	0	0	0
	-	-	-	-	-	-	-	-	-	-	-
25-29	0	0	0	0	0	0	0	0	0	0	0
	-	-	-	-	-	-	-	-	-	-	-
30-34	0	0	1	7	0	0	0	0	0	0	8
	-	-	-	-	-	-	-	-	-	-	-
35-39	0	4	6	58	18	1	0	0	0	0	87
	-	-	-	128,761	-	-	-	-	-	-	118,983
40-44	0	1	9	67	96	9	0	0	0	0	182
	-	-	-	129,365	135,550	-	-	-	-	-	129,652
45-49	0	2	9	77	167	50	10	2	0	0	317
	-	-	-	129,660	140,090	157,550	-	-	-	-	137,676
50-54	0	0	9	96	222	126	90	32	1	0	576
	-	-	-	127,119	130,055	154,153	158,384	136,899	-	-	138,986
55-59	0	4	2	84	176	100	167	141	39	0	713
	-	-	-	133,453	131,986	154,347	164,270	170,302	151,419	-	151,167
60-64	0	3	4	56	94	40	47	62	26	4	336
	-	-	-	114,065	130,837	156,034	166,849	178,246	175,217	-	147,095
65-69	0	0	0	16	23	9	10	10	3	1	72
	-	-	-	-	130,191	-	-	-	-	-	149,501
70 & over	1	1	1	6	3	2	0	2	1	1	18
	-	-	-	-	-	-	-	-	-	-	-
Total	1	15	41	467	799	337	324	249	70	6	2,309
	-	-	91,403	128,319	132,966	154,074	161,008	167,898	164,871	-	142,648

[1] Age and service for purposes of determining category are based on exact (not rounded) values.

Plan Name: LLNS Defined Benefit Pension Plan
EIN / PN: 20-5624386/003
Plan Sponsor: Lawrence Livermore National Security, LLC
Valuation Date January 1, 2018

Schedule SB, Part V
Statement of Actuarial Assumptions/Methods

Economic Assumptions

Interest rate basis:

Applicable month	January
Interest rate basis	3-segment rates

Interest rates:	**Reflecting Corridors**	**Not Reflecting Corridors**
First segment rate	3.92%	1.81%
Second segment rate	5.52%	3.68%
Third segment rate	6.29%	4.53%
Effective interest rate	5.85%	4.11%

Annual rates of increase

Compensation:

- Representative rates

Salary Merit Increase Rates	
Age	Rate
25	5.20%
30	7.20%
35	6.10%
40	5.10%
45	4.40%
50	3.70%
55	3.40%
60	3.10%
65	3.00%
70	2.80%

- Weighted Average 3.49%

Future Social Security wage bases	2.25%
Statutory limits on compensation	2.00%

Plan-related expenses $1,100,000; administrative expenses are paid from the trust

Rates not reflecting stabilization are used to determine PBGC variable rate premiums if the alternative method is used, and are used to determine the PBGC FTAP and the PBGC 4010 FS.

Demographic Assumptions

Inclusion date

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

New or rehired employees

It was assumed there will be no new or rehired employees.

Mortality

Healthy

Separate rates for non-annuitants (based on RP-2000 “Employees” table without collar or amount adjustments, projected to 2033 using Scale AA) and annuitants (based on RP-2000 “Healthy Annuitants” table without collar or amount adjustments, projected to 2025 using Scale AA).

Disabled

Same as healthy mortality.

Termination

Representative rates varying by age as shown below:

Percentage leaving during the year	
Age	Rate
25	6.00%
30	6.00%
35	5.00%
40	3.00%
45+	1.50%

Disability

Representative rates at which participants become disabled by age and gender are shown below:

Percentage becoming disabled during the year		
Age	Males	Females
25	0.10%	0.08%
30	0.12%	0.10%
35	0.17%	0.16%
40	0.22%	0.25%
45	0.28%	0.36%
50	0.36%	0.53%
55	0.47%	0.75%
60	0.54%	0.86%
65+	0.54%	0.86%

Retirement

Rates varying by age, average age 62.

For purposes of determining the Funding Target and Target Normal Cost (both disregarding at-risk assumptions), the rates at which participants retire by age are shown below.

Percentage retiring during the year	
Age	Rate
50	2.00%
51	2.00%
52	2.00%
53	2.00%
54	2.00%
55	4.00%
56	3.00%
57	4.00%
58	5.00%
59	9.00%
60	22.00%
61	15.00%
62	18.00%
63	20.00%
64	15.00%
65	20.00%
66	20.00%
67	20.00%
68	20.00%
69	20.00%
70	20.00%
71	20.00%
72	20.00%
73	20.00%
74	20.00%
75+	100.00%

SCHEDULE SB ATTACHMENTS

Benefit commencement date:

Preretirement death benefit	The later of the death of the active participant or the date the participant would have attained age 50.
Deferred vested benefit	The later of age 59 or termination of employment.
Disability benefit	The later of age 60 or disability.
Retirement benefit	Upon termination of employment.
Form of payment	Single participants: single life annuity Married participants: joint and 50% survivor annuity
Percent married	80% of males; 55% of females. Used to value pre-retirement surviving spouse benefits and in determining the optional forms expected to be elected at commencement.
Spouse age	Male retirees three years older than female spouses; female retirees two years younger than male spouses.
Covered pay	Assumed plan compensation for the year beginning on the valuation date was determined as prior year pensionable earnings rolled forward one year with the salary increase assumption.
At-risk assumptions	For at-risk calculations, all participants eligible to elect benefits during the current and subsequent ten plan years are assumed to commence benefits at the earliest possible date under the plan, but not before the end of the current plan year, except in accordance with the regular valuation assumptions. In addition, all participants (not just those eligible to begin benefits within the next 11 years) are assumed to elect the most valuable form of benefit under the plan.
Timing of benefit payments	Annuity payments are payable monthly at the beginning of the month and lump sum payments are payable on date of decrement.

SCHEDULE SB ATTACHMENTS

Methods

Valuation date	First day of the plan year.
Funding target	Present value of accrued benefits as required by regulations under IRC §430.
Target normal cost	Present value of benefits expected to accrue during the plan year, net of employee contributions, plus plan related expenses expected to be paid from the plan year, as required by regulations under IRC §430.
Actuarial value of assets for determining minimum required contributions	Smoothed fair market value of assets over the current and prior two years, adjusted for contributions, benefit payments, administrative expenses, and expected earnings. The average value of assets calculated in this manner is further limited to not less than 90% nor more than 110% of fair market value. A characteristic of this method is that the expected distribution of the value of plan assets is skewed toward understatement relative to the corresponding market values for expected long-term rates of return in excess of the third segment rate under IRC section 430(h)(2)(c)(iii).
Benefits not valued	Willis Towers Watson has reviewed the plan provisions with the plan sponsor and, based on that review, is not aware of any other significant benefits required to be valued that were not.

Sources of Data and Other Information

The plan sponsor through its third party administrator, 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. In consultation with plan sponsor, the following assumptions were made for missing or apparently inconsistent data elements: available prior year data was used for any missing data for the current year.

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 ATTACHMENTS

Assumptions Rationale - Significant Economic Assumptions

Discount rate	The basis chosen was selected by the plan sponsor from among choices prescribed by law, all of which are based on observed market data over certain periods of time.
Plan-related expenses	As required by regulations, plan-related expenses are calculated by estimating the expenses to be paid from the trust during the coming year (including, for example, expected PBGC premiums and actuarial, accounting, legal, administration and trustee fees to be paid from the trust). This was done by taking the prior year's actual plan administrative expenses, minus the previous year's PBGC premium, plus the current year's estimated PBGC premium rounded up to the next higher $100,000.
Rates of increase in Compensation, National Average Wages (NAW), and CPI	Assumed increases were chosen by the plan sponsor and, as required by the IRC, they represent an estimate of future experience.
Assumed return for asset smoothing	The assumed return of 6.50% used for asset smoothing is the expected return on assets assumption chosen by the client with the help of their investment advisors for the 2018 plan year under U.S. GAAP. Although determining the expected rate of return on plan assets was not within the scope of our work, it is the client's best estimate and we determined that it does not significantly conflict with what would be reasonable based on their asset allocation. The return on assets is limited by the applicable 3rd segment rate when calculating the actuarial value of assets.

Assumptions Rationale - Significant Demographic Assumptions

Healthy Mortality	Assumptions used for funding purposes are as prescribed by IRC §430(h). Note that the plan sponsor has decided, as allowed by regulation §1.430(h)(3)-1, to delay until the 2019 plan year updating the required mortality table to reflect the RP-2014 study and subsequent Society of Actuaries studies.
Disabled Mortality	Assumptions used for funding purposes are as prescribed by IRC §430(h). Note that the plan sponsor has decided, as allowed by regulation §1.430(h)(3)-1, to delay until the 2019 plan year updating the required mortality table to reflect the RP-2014 study and subsequent Society of Actuaries studies.
Termination	Termination rates were based on an experience study conducted October 2017.

Plan Name:	LLNS Defined Benefit Pension Plan
EIN / PN:	20-5624386/003
Plan Sponsor:	Lawrence Livermore National Security, LLC
Valuation Date	January 1, 2018

	Termination rates for at-risk funding calculations are as required by IRC 430.
Disability	Disability rates are based on future expectations informed by past experience.
Retirement	Retirement rates were based on an experience study conducted October 2017. Retirement rates for at-risk funding calculations are as required by IRC 430.
Benefit commencement date for deferred benefits:	
Preretirement death benefit	Surviving spouses are assumed to begin benefits at the earliest permitted commencement date because ERISA requires benefits to start then unless the spouse elects to defer. If the spouse elects to defer, actuarial increases from the earliest commencement date must be given, so that a later commencement date is expected to be of approximately equal value, and experience indicates that most spouses do take the benefit as soon as it is available.
Deferred vested benefit	Deferred vested participants' assumed commencement age is a single age intended to capture the average age at commencement. Deferred vested early commencement factors are not subsidized so that the difference between this approach and using assumed commencement rates at multiple ages is not expected to be significant.
Form of payment	The retiring participants eligible for joint and survivor annuities are assumed to take the 50% joint and survivor annuity since the benefit form is subsidized by LLNS.
Percent married	The assumed percentage married is based on an experience study conducted October 2017.
Spouse age	The assumed age difference for spouses is based on an experience study conducted October 2017.

SCHEDULE SB ATTACHMENTS

Source of Prescribed Method

Funding methods	The methods used for funding purposes as described in Appendix A, including the method of determining plan assets, are “prescribed methods set by law”, as defined in the actuarial standards of practice (ASOPs). These methods are required by IRC §430, or were selected by the plan sponsor from a range of methods permitted by IRC §430.

Changes in Assumptions and Methods

Change in assumptions since prior valuation

A change in the interest rate assumption from segment rates as of January 2017 to segment rates as of January 2018, each adjusted as applicable to fall within the 25-year average interest rate stabilization corridor.

A change in the mortality assumption from the 2017 static mortality table for annuitants and non-annuitants per §1.430(h)(3)-1(e) to the 2018 static mortality table for annuitants and non-annuitants per §1.430(h)(3)-1(f).

The ASC 960 mortality was changed from the RP-2014 Employee and Annuitant Mortality Tables for Males and Females adjusted backwards to 2006 with MP-2014 and projected generationally forward using sex-distinct Scale MP-2016 to the RP-2014 Employee and Annuitant Mortality Tables for Males and Females adjusted backwards to 2006 with MP-2014 and projected generationally forward using sex-distinct Scale MP-2017.

The retirement rates, termination rates, rate of compensation increase, and percent married assumptions were updated based on an experience study conducted October 2017.

Change in methods since prior valuation

None.

Form 5500	Annual Return/Report of Employee Benefit Plan	OMB Nos. 1210-0110 1210-0089
Department of the Treasury Internal Revenue Service Department of Labor Employee Benefits Security Administration Pension Benefit Guaranty Corporation	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.**	**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
- ☐ 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
- ☐ 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. . . . . ▶ ☐

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

Part II Basic Plan Information—enter all requested information

1a Name of plan LLNS DEFINED BENEFIT PENSION PLAN	**1b** Three-digit plan number (PN) ▶ 003 **1c** Effective date of plan 10/01/2007
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) Lawrence Livermore National Security Llc 7000 East Avenue L640 Livermore CA 94550	**2b** Employer Identification Number (EIN) 20-5624386 **2c** Plan Sponsor's telephone number 925-424-3711 **2d** Business code (see instructions) 541700

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	[signature] **Signature of plan administrator**	10/11/19 Date	LISA MONTALVO 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

LLNS BENEFITS AND INVESTMENT COMMITTEE

7000 EAST AVENUE
MAIL STOP L-640
LIVERMORE CA 94550

3b Administrator's EIN: 20-5624386

3c Administrator's telephone number: 925-424-5085

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**	3,605
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)**	2,309
a(2)	Total number of active participants at the end of the plan year	**6a(2)**	2,124
b	Retired or separated participants receiving benefits	**6b**	1,184
c	Other retired or separated participants entitled to future benefits	**6c**	247
d	Subtotal. Add lines **6a(2)**, **6b**, and **6c**	**6d**	3,555
e	Deceased participants whose beneficiaries are receiving or are entitled to receive benefits	**6e**	47
f	Total. Add lines **6d** and **6e**	**6f**	3,602
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**	0
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 1B 3F

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)
- (1) ☐ Insurance
- (2) ☐ Code section 412(e)(3) insurance contracts
- (3) ☒ Trust
- (4) ☐ General assets of the sponsor

9b Plan benefit arrangement (check all that apply)
- (1) ☐ Insurance
- (2) ☐ Code section 412(e)(3) insurance contracts
- (3) ☒ Trust
- (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)	Single-Employer Defined Benefit Plan Actuarial 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) and section 6059 of the Internal Revenue Code (the Code). ▶ **File as an attachment to Form 5500 or 5500-SF.**	**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 LLNS Defined Benefit Pension Plan	**B** Three-digit plan number (PN) ▶ 003
C Plan sponsor's name as shown on line 2a of Form 5500 or 5500-SF Lawrence Livermore National Security, LLC	**D** Employer Identification Number (EIN) 20-5624386

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	3,418,708,499
b Actuarial value	2b	3,135,813,588

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	1,041	1,020,953,552	1,020,953,552
b For terminated vested participants	276	115,643,728	115,643,728
c For active participants	2,309	1,456,435,146	1,460,835,125
d Total	3,626	2,593,032,426	2,597,432,405

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	5.85%
6 Target normal cost	6	89,339,685

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 Erik A. Heiskanen EAH — August 26, 2019

Signature of actuary — Date

Erik A. Heiskanen — 1707772

Type or print name of actuary — Most recent enrollment number

Willis Towers Watson US LLC — 206-625-1125

Firm name — Telephone number (including area code)

600 University Street
Suite 3100
Seattle WA 98101-1176

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)	0	122,347,999
8	Portion elected for use to offset prior year's funding requirement (line 35 from prior year)	0	0
9	Amount remaining (line 7 minus line 8)	0	122,347,999
10	Interest on line 9 using prior year's actual return of 20.93%	0	25,607,436
11	Prior year's excess contributions to be added to prefunding balance:		
	a Present value of excess contributions (line 38a from prior year)		21,362,219
	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 6.06%		1,294,550
	b(2) Interest on line 38b from prior year Schedule SB, using prior year's actual return		0
	c Total available at beginning of current plan year to add to prefunding balance		22,656,769
	d Portion of (c) to be added to prefunding balance		22,656,769
12	Other reductions in balances due to elections or deemed elections	0	0
13	Balance at beginning of current year (line 9 + line 10 + line 11d – line 12)	0	170,612,204

Part III Funding Percentages

14	Funding target attainment percentage	14	114.15%
15	Adjusted funding target attainment percentage	15	120.72%
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	123.09%
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
05/01/2019	23,000,000	0			
12/31/2018	0	22,104,955			
			Totals ►	18(b) 23,000,000	18(c) 22,104,955

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	0
b Contributions made to avoid restrictions adjusted to valuation date	19b	0
c Contributions allocated toward minimum required contribution for current year adjusted to valuation date	19c	21,320,957

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

b Applicable month (enter code)	21b	0
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	

Part VII Reconciliation of Unpaid Minimum Required Contributions For Prior Years

28 Unpaid minimum required contributions for all prior years	28	0
29 Discounted employer contributions allocated toward unpaid minimum required contributions from prior years (line 19a)	29	0
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	89,339,685
b Excess assets, if applicable, but not greater than line 31a	31b	89,339,685

32 Amortization installments:	Outstanding Balance	Installment
a Net shortfall amortization installment	0	0
b Waiver amortization installment	0	0

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	0

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

36 Additional cash requirement (line 34 minus line 35)	36	0
37 Contributions allocated toward minimum required contribution for current year adjusted to valuation date (line 19c)	37	21,320,957
38 Present value of excess contributions for current year (see instructions)		
a Total (excess, if any, of line 37 over line 36)	38a	21,320,957
b Portion included in line 38a attributable to use of prefunding and funding standard carryover balances	38b	0
39 Unpaid minimum required contribution for current year (excess, if any, of line 36 over line 37)	39	0
40 Unpaid minimum required contributions for all years	40	0

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 (Form 5500)	Single-Employer Defined Benefit Plan Actuarial 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) and section 6059 of the Internal Revenue Code (the Code). ▶ **File as an attachment to Form 5500 or 5500-SF.**	**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 LLNS Defined Benefit Pension Plan	**B** Three-digit plan number (PN) ▶ 003
C Plan sponsor's name as shown on line 2a of Form 5500 or 5500-SF Lawrence Livermore National Security, LLC	**D** Employer Identification Number (EIN) 20-5624386

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	3,418,708,499
b Actuarial value	2b	3,135,813,588

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	1,041	1,020,953,552	1,020,953,552
b For terminated vested participants	276	115,643,728	115,643,728
c For active participants	2,309	1,456,435,146	1,460,835,125
d Total	3,626	2,593,032,426	2,597,432,405

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	5.85%
6 Target normal cost	6	89,339,685

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

Erik A. Heiskanen | 1707772

Type or print name of actuary | Most recent enrollment number

Willis Towers Watson US LLC | 206-625-1125

Firm name | Telephone number (including area code)

600 University Street
Suite 3100
Seattle WA 98101-1176

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)	0	122,347,999
8	Portion elected for use to offset prior year's funding requirement (line 35 from prior year)	0	0
9	Amount remaining (line 7 minus line 8)	0	122,347,999
10	Interest on line 9 using prior year's actual return of 20.93%	0	25,607,436
11	Prior year's excess contributions to be added to prefunding balance:		
	a Present value of excess contributions (line 38a from prior year)		21,362,219
	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 6.06%		1,294,550
	b(2) Interest on line 38b from prior year Schedule SB, using prior year's actual return		0
	c Total available at beginning of current plan year to add to prefunding balance		22,656,769
	d Portion of (c) to be added to prefunding balance		22,656,769
12	Other reductions in balances due to elections or deemed elections	0	0
13	Balance at beginning of current year (line 9 + line 10 + line 11d – line 12)	0	170,612,204

Part III Funding Percentages

14	Funding target attainment percentage	14	114.15%
15	Adjusted funding target attainment percentage	15	120.72%
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	123.09%
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
05/01/2019	23,000,000	0			
12/31/2018	0	22,104,955			
			Totals ►	18(b) 23,000,000	18(c) 22,104,955

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	0
b Contributions made to avoid restrictions adjusted to valuation date	19b	0
c Contributions allocated toward minimum required contribution for current year adjusted to valuation date	19c	21,320,957

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**	0
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**	

Part VII Reconciliation of Unpaid Minimum Required Contributions For Prior Years

28 Unpaid minimum required contributions for all prior years	**28**	0
29 Discounted employer contributions allocated toward unpaid minimum required contributions from prior years (line 19a)	**29**	0
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**	89,339,685
b Excess assets, if applicable, but not greater than line 31a	**31b**	89,339,685

32 Amortization installments:	Outstanding Balance	Installment
a Net shortfall amortization installment	0	0
b Waiver amortization installment	0	0

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**	0

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

36 Additional cash requirement (line 34 minus line 35)	**36**	0
37 Contributions allocated toward minimum required contribution for current year adjusted to valuation date (line 19c)	**37**	21,320,957

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

a Total (excess, if any, of line 37 over line 36)	**38a**	21,320,957
b Portion included in line 38a attributable to use of prefunding and funding standard carryover balances	**38b**	0
39 Unpaid minimum required contribution for current year (excess, if any, of line 36 over line 37)	**39**	0
40 Unpaid minimum required contributions for all years	**40**	0

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 ATTACHMENTS

Schedule SB – Statement by Enrolled Actuary

Plan Sponsor	Lawrence Livermore National Security, LLC
EIN/PN	20-5624386/003
Plan Name	LLNS Defined Benefit Pension Plan
Valuation Date	January 1, 2018
Enrolled Actuary	Erik A. Heiskanen
Enrollment Number	17-07772

The actuarial assumptions that are not mandated by IRC § 430 and regulations, 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 Item 18 of Schedule SB were listed in reliance on information provided by the plan administrator and/or trustee.

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

See Schedule SB, Part V - Statement of Actuarial Assumptions/Methods 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.

x	q_x^r	l_x	${}_{x-50}p_{50} = l_x / l_{50}$	$q_x^r * l_x / l_{50}$	$x * q_x * l_x / l_{50}$
50	0.02	1,000,000	1.000000	0.020000	1.000000
51	0.02	980,000	0.980000	0.019600	0.999600
52	0.02	960,400	0.960400	0.019208	0.998816
53	0.02	941,192	0.941192	0.018824	0.997664
54	0.02	922,368	0.922368	0.018447	0.996158
55	0.04	903,921	0.903921	0.036157	1.988626
56	0.03	867,764	0.867764	0.026033	1.457843
57	0.04	841,731	0.841731	0.033669	1.919147
58	0.05	808,062	0.808062	0.040403	2.343379
59	0.09	767,659	0.767659	0.069089	4.076268
60	0.22	698,569	0.698569	0.153685	9.221116
61	0.15	544,884	0.544884	0.081733	4.985690
62	0.18	463,152	0.463152	0.083367	5.168771
63	0.20	379,784	0.379784	0.075957	4.785282
64	0.15	303,827	0.303827	0.045574	2.916743
65	0.20	258,253	0.258253	0.051651	3.357293
66	0.20	206,603	0.206603	0.041321	2.727155
67	0.20	165,282	0.165282	0.033056	2.214780
68	0.20	132,226	0.132226	0.026445	1.798269
69	0.20	105,781	0.105781	0.021156	1.459772
70	0.20	84,624	0.084624	0.016925	1.184742
71	0.20	67,700	0.067700	0.013540	0.961334
72	0.20	54,160	0.054160	0.010832	0.779899
73	0.20	43,328	0.043328	0.008666	0.632585
74	0.20	34,662	0.034662	0.006932	0.513000
75	1.00	27,730	0.027730	0.027730	2.079730

Average age at retirement	61.563661
Rounded for Schedule SB item 22	62

Plan Name:	LLNS Defined Benefit Pension Plan
EIN / PN:	20-5624386/003
Plan Sponsor:	Lawrence Livermore National Security, LLC
Valuation Date	January 1, 2018

Schedule SB, Line 24
Change in Actuarial Assumptions

The retirement rates, termination rates, rate of compensation increase, and percent married assumptions were updated based on an experience study conducted October 2017.

Plan Name:	LLNS Defined Benefit Pension Plan
EIN / PN:	20-5624386/003
Plan Sponsor:	Lawrence Livermore National Security, LLC
Valuation Date	January 1, 2018

Schedule SB, Part V
Statement of Actuarial Assumptions/Methods

Economic Assumptions

Interest rate basis:

Applicable month	January
Interest rate basis	3-segment rates

Interest rates:	**Reflecting Corridors**	**Not Reflecting Corridors**
First segment rate	3.92%	1.81%
Second segment rate	5.52%	3.68%
Third segment rate	6.29%	4.53%
Effective interest rate	5.85%	4.11%

Annual rates of increase

Compensation:

- Representative rates

Salary Merit Increase Rates	
Age	Rate
25	5.20%
30	7.20%
35	6.10%
40	5.10%
45	4.40%
50	3.70%
55	3.40%
60	3.10%
65	3.00%
70	2.80%

- Weighted Average 3.49%

Future Social Security wage bases	2.25%
Statutory limits on compensation	2.00%

Plan-related expenses $1,100,000; administrative expenses are paid from the trust

Rates not reflecting stabilization are used to determine PBGC variable rate premiums if the alternative method is used, and are used to determine the PBGC FTAP and the PBGC 4010 FS.

Demographic Assumptions

Inclusion date

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

New or rehired employees

It was assumed there will be no new or rehired employees.

Mortality

Healthy

Separate rates for non-annuitants (based on RP-2000 "Employees" table without collar or amount adjustments, projected to 2033 using Scale AA) and annuitants (based on RP-2000 "Healthy Annuitants" table without collar or amount adjustments, projected to 2025 using Scale AA).

Disabled

Same as healthy mortality.

Termination

Representative rates varying by age as shown below:

Percentage leaving during the year	
Age	Rate
25	6.00%
30	6.00%
35	5.00%
40	3.00%
45+	1.50%

Disability

Representative rates at which participants become disabled by age and gender are shown below:

Percentage becoming disabled during the year		
Age	Males	Females
25	0.10%	0.08%
30	0.12%	0.10%
35	0.17%	0.16%
40	0.22%	0.25%
45	0.28%	0.36%
50	0.36%	0.53%
55	0.47%	0.75%
60	0.54%	0.86%
65+	0.54%	0.86%

SCHEDULE SB ATTACHMENTS

Retirement

Rates varying by age, average age 62.

For purposes of determining the Funding Target and Target Normal Cost (both disregarding at-risk assumptions), the rates at which participants retire by age are shown below.

Percentage retiring during the year	
Age	Rate
50	2.00%
51	2.00%
52	2.00%
53	2.00%
54	2.00%
55	4.00%
56	3.00%
57	4.00%
58	5.00%
59	9.00%
60	22.00%
61	15.00%
62	18.00%
63	20.00%
64	15.00%
65	20.00%
66	20.00%
67	20.00%
68	20.00%
69	20.00%
70	20.00%
71	20.00%
72	20.00%
73	20.00%
74	20.00%
75+	100.00%

SCHEDULE SB ATTACHMENTS

Benefit commencement date:	
Preretirement death benefit	The later of the death of the active participant or the date the participant would have attained age 50.
Deferred vested benefit	The later of age 59 or termination of employment.
Disability benefit	The later of age 60 or disability.
Retirement benefit	Upon termination of employment.
Form of payment	Single participants: single life annuity Married participants: joint and 50% survivor annuity
Percent married	80% of males; 55% of females. Used to value pre-retirement surviving spouse benefits and in determining the optional forms expected to be elected at commencement.
Spouse age	Male retirees three years older than female spouses; female retirees two years younger than male spouses.
Covered pay	Assumed plan compensation for the year beginning on the valuation date was determined as prior year pensionable earnings rolled forward one year with the salary increase assumption.
At-risk assumptions	For at-risk calculations, all participants eligible to elect benefits during the current and subsequent ten plan years are assumed to commence benefits at the earliest possible date under the plan, but not before the end of the current plan year, except in accordance with the regular valuation assumptions. In addition, all participants (not just those eligible to begin benefits within the next 11 years) are assumed to elect the most valuable form of benefit under the plan.
Timing of benefit payments	Annuity payments are payable monthly at the beginning of the month and lump sum payments are payable on date of decrement.

SCHEDULE SB ATTACHMENTS

Methods

Valuation date	First day of the plan year.
Funding target	Present value of accrued benefits as required by regulations under IRC §430.
Target normal cost	Present value of benefits expected to accrue during the plan year, net of employee contributions, plus plan related expenses expected to be paid from the plan year, as required by regulations under IRC §430.
Actuarial value of assets for determining minimum required contributions	Smoothed fair market value of assets over the current and prior two years, adjusted for contributions, benefit payments, administrative expenses, and expected earnings. The average value of assets calculated in this manner is further limited to not less than 90% nor more than 110% of fair market value. A characteristic of this method is that the expected distribution of the value of plan assets is skewed toward understatement relative to the corresponding market values for expected long-term rates of return in excess of the third segment rate under IRC section 430(h)(2)(c)(iii).
Benefits not valued	Willis Towers Watson has reviewed the plan provisions with the plan sponsor and, based on that review, is not aware of any other significant benefits required to be valued that were not.

Sources of Data and Other Information

The plan sponsor through its third party administrator, 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. In consultation with plan sponsor, the following assumptions were made for missing or apparently inconsistent data elements: available prior year data was used for any missing data for the current year.

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 ATTACHMENTS

Assumptions Rationale - Significant Economic Assumptions

Discount rate	The basis chosen was selected by the plan sponsor from among choices prescribed by law, all of which are based on observed market data over certain periods of time.
Plan-related expenses	As required by regulations, plan-related expenses are calculated by estimating the expenses to be paid from the trust during the coming year (including, for example, expected PBGC premiums and actuarial, accounting, legal, administration and trustee fees to be paid from the trust). This was done by taking the prior year's actual plan administrative expenses, minus the previous year's PBGC premium, plus the current year's estimated PBGC premium rounded up to the next higher $100,000.
Rates of increase in Compensation, National Average Wages (NAW), and CPI	Assumed increases were chosen by the plan sponsor and, as required by the IRC, they represent an estimate of future experience.
Assumed return for asset smoothing	The assumed return of 6.50% used for asset smoothing is the expected return on assets assumption chosen by the client with the help of their investment advisors for the 2018 plan year under U.S. GAAP. Although determining the expected rate of return on plan assets was not within the scope of our work, it is the client's best estimate and we determined that it does not significantly conflict with what would be reasonable based on their asset allocation. The return on assets is limited by the applicable 3rd segment rate when calculating the actuarial value of assets.

Assumptions Rationale - Significant Demographic Assumptions

Healthy Mortality	Assumptions used for funding purposes are as prescribed by IRC §430(h). Note that the plan sponsor has decided, as allowed by regulation §1.430(h)(3)-1, to delay until the 2019 plan year updating the required mortality table to reflect the RP-2014 study and subsequent Society of Actuaries studies.
Disabled Mortality	Assumptions used for funding purposes are as prescribed by IRC §430(h). Note that the plan sponsor has decided, as allowed by regulation §1.430(h)(3)-1, to delay until the 2019 plan year updating the required mortality table to reflect the RP-2014 study and subsequent Society of Actuaries studies.
Termination	Termination rates were based on an experience study conducted October 2017.

Plan Name:	LLNS Defined Benefit Pension Plan
EIN / PN:	20-5624386/003
Plan Sponsor:	Lawrence Livermore National Security, LLC
Valuation Date	January 1, 2018

	Termination rates for at-risk funding calculations are as required by IRC 430.
Disability	Disability rates are based on future expectations informed by past experience.
Retirement	Retirement rates were based on an experience study conducted October 2017. Retirement rates for at-risk funding calculations are as required by IRC 430.
Benefit commencement date for deferred benefits:	
Preretirement death benefit	Surviving spouses are assumed to begin benefits at the earliest permitted commencement date because ERISA requires benefits to start then unless the spouse elects to defer. If the spouse elects to defer, actuarial increases from the earliest commencement date must be given, so that a later commencement date is expected to be of approximately equal value, and experience indicates that most spouses do take the benefit as soon as it is available.
Deferred vested benefit	Deferred vested participants' assumed commencement age is a single age intended to capture the average age at commencement. Deferred vested early commencement factors are not subsidized so that the difference between this approach and using assumed commencement rates at multiple ages is not expected to be significant.
Form of payment	The retiring participants eligible for joint and survivor annuities are assumed to take the 50% joint and survivor annuity since the benefit form is subsidized by LLNS.
Percent married	The assumed percentage married is based on an experience study conducted October 2017.
Spouse age	The assumed age difference for spouses is based on an experience study conducted October 2017.

SCHEDULE SB ATTACHMENTS

Source of Prescribed Method

Funding methods	The methods used for funding purposes as described in Appendix A, including the method of determining plan assets, are "prescribed methods set by law", as defined in the actuarial standards of practice (ASOPs). These methods are required by IRC §430, or were selected by the plan sponsor from a range of methods permitted by IRC §430.

Changes in Assumptions and Methods

Change in assumptions since prior valuation	A change in the interest rate assumption from segment rates as of January 2017 to segment rates as of January 2018, each adjusted as applicable to fall within the 25-year average interest rate stabilization corridor. A change in the mortality assumption from the 2017 static mortality table for annuitants and non-annuitants per §1.430(h)(3)-1(e) to the 2018 static mortality table for annuitants and non-annuitants per §1.430(h)(3)-1(f). The ASC 960 mortality was changed from the RP-2014 Employee and Annuitant Mortality Tables for Males and Females adjusted backwards to 2006 with MP-2014 and projected generationally forward using sex-distinct Scale MP-2016 to the RP-2014 Employee and Annuitant Mortality Tables for Males and Females adjusted backwards to 2006 with MP-2014 and projected generationally forward using sex-distinct Scale MP-2017. The retirement rates, termination rates, rate of compensation increase, and percent married assumptions were updated based on an experience study conducted October 2017.
Change in methods since prior valuation	None.

Schedule SB, Part V
Summary of Plan Provisions

Plan Provisions

The plan was amended and restated effective January 1, 2017.

Covered employees	Employed or on an approved leave of absence with the University of California on September 30, 2007; Former participant (or eligible to become a participant) in the University of California Retirement Plan (UCRP); and Elected to accept employment with LLNS under Total Compensation Package 1 (“TCP1”) as of October 1, 2007 (or later date if on an Approved Leave of Absence).
Participation Date	Later of October 1, 2007 or date of becoming an Eligible Employee.

Definitions

Highest Average Plan Compensation (HAPC)	Monthly amount that is the highest average Full-Time Equivalent Compensation during 36 continuous months. For inactive Members, HAPC is adjusted each July 1 for movement in the CPI but not more than 2.0%. However, if movement in the CPI exceeds 4.0%, then HAPC is adjusted by 2.0% plus 75% of the amount that CPI movement exceeds 4.0%. The maximum adjustment is 6%. No adjustment to HAPC is provided after the earlier of a Member’s retirement date and Normal Retirement Date.
Full-Time Equivalent Compensation	100% of Plan Compensation (base salary excluding overtime or bonus pay) which a Member would earn from the Employer for that calendar month.
Credited Service	One year for each plan year in which a Member earns 2,080 hours or more and prorated for plan years in which a Member earns less than 2,080 hours. For Members who retire within 120 days of termination of service, proportional Credited Service will be granted for accumulated sick leave based on a 2,080-hour year. Includes Credited Service earned under the UCRP.
Period of Service	Years and complete months from employment commencement to date of termination.

Actuarial Equivalent Mortality	1994 GAR Mortality Table for males (set back three years for Members and set back five years for beneficiaries).
Actuarial Equivalent Interest	7.5%
Actuarial Equivalent COLA	2% per year.
Normal Retirement Date (NRD)	First of month coinciding with or next following the attainment of age 60 with five years of Credited Service.

Eligibility for Benefits

Normal Retirement	Age 60 and completion of five-year Period of Service.
Early Retirement	Age 50 and completion of five-year Period of Service.
Late (or Deferred) Retirement	Any time after eligibility for Normal Retirement.
Vested Termination	Completion of five-year Period of Service.
Disability	Completion of five-year Period of Service and eligible for and receives disability income under the Employer's Defined Benefit Disability Program.
Preretirement Death Benefit	Active with Period of Service of two years or inactive vested (including Members on Disability) with a spouse on date of death.
Basic Death Benefit	Active with Period of Service of two years or inactive Vested (including Members on Disability).

Benefits Paid Upon the Following Events

Basic Retirement Income

Monthly annuity is the product of:

a. 2.5%

b. Highest Average Plan Compensation less $133; and

c. Years of Credited Service.

The product of (a) and (c) is limited to 100%.

Social Security Supplement

Monthly annuity payable until age 65 is the product of:

a. 2.5%

b. $133; and

c. Years of Credited Service.

The product of (a) and (c) is limited to 100%.

Adjustment for Members With Non Coordinated Benefits September 30, 2007

For Members entitled to Social Security benefits:

- In calculation of Basic Retirement Income, offset $133 only for Credited Service earned after October 1, 2007.
- Calculation of Social Security Supplement based on Credited Service after October 1, 2007.

For Members not entitled to Social Security benefits:

- Basic Retirement Income will be calculated without the $133 offset.
- Neither the Member nor the Member's spouse shall be eligible for the Social Security Supplement.

Early Retirement

Normal Retirement benefits and Social Security Supplements are reduced according to the following table:

Percentage of Age 60 Benefit	
Age	Percentage
50	44.0%
51	49.6%
52	55.2%
53	60.8%
54	66.4%
55	72.0%
56	77.6%
57	83.2%
58	88.8%
59	94.4%
60	100.0%

Late (or Deferred) Retirement

Normal Retirement benefit actuarially increased for those months in which the Member was credited for less than 40 hours of service and for those months after April 1 of the calendar year following the year the Member turns age 70½ regardless of the hours of service.

Vested Termination

Early Retirement benefit commencing at Early Retirement Date.

Disability

Early or Normal Retirement benefit. Credited Service continues to accrue until earlier of the date the Member ceases to be Disabled, retires, or reaches Normal Retirement Date.

Maximum Basic Retirement Income is greater of:

- Basic Retirement Income under vested Termination; or
- 40% of final complete month of Full-Time Equivalent Compensation. The 40% factor is increased to 60% for Members with non-coordinated benefits under the UCRP.

Preretirement Death	Not Early Retirement eligible: Amount that would be paid if participant had Terminated on the earlier of date of Termination or date of death, survived until the spouse's date of Retirement, elected a 50% joint and contingent annuity naming the spouse as the Contingent Annuitant, and then died. The spouse's date of Retirement may not be earlier than the date the Member would have attained 50 nor later than the Member's Normal Retirement Date. Retirement eligible: Same as above, except that Member is assumed to have elected a 100% joint and contingent annuity.
Basic death benefit	$7,500. However, active Members who were participants in the UCRP prior to October 1, 1990 receive the greater of $7,500 or $1,500 plus one month of Full-Time Equivalent Compensation.

Other Plan Provisions

Normal Forms of Payment	50% joint and contingent annuity for married participants, single life annuity for unmarried participants.
Optional Forms of Payment of the Basic Retirement Income	100% joint and contingent, 75% joint and contingent, 66.67% joint and contingent, 50% joint and contingent, and single life annuity.
Calculation of Joint and Contingent Form	Actuarial Equivalent of the single life annuity increased by 2.4%. For Members with non-coordinated benefits on September 30, 2007, the 2.4% factor is replaced by 4.8%, except that if such Members are eligible for Social Security benefits, the factor shall be 4.8% for Credited Service earned prior to October 1, 2007 and 2.4% for Credited Service earned after October 1, 2007.
Employee Contributions	Beginning June 3, 2012, a participant must contribute 5% of earnings. Beginning June 30, 2013, a participant must contribute 7% of earnings.

SCHEDULE SB ATTACHMENTS

Cost of Living Adjustment Applied to Basic Retirement Income	The monthly benefit shall be adjusted on each July 1 for movement in the CPI but not more than 2.0%. However, if movement in the CPI exceeds 4.0%, then the benefit is adjusted by 2.0% plus 75% of the amount that CPI movement exceeds 4.0%. The maximum adjustment is 6%. No adjustment shall be made if it will decrease the benefit.
Maximum on Benefits and Pay	All benefits and pay for any calendar year may not exceed the maximum limitations for that year as defined in the Internal Revenue Code. The plan provides for increasing the dollar limits automatically as such changes become effective.

Future Plan Changes

No future plan changes were recognized.

Changes in Benefits Valued Since Prior Year

None.

Schedule SB, Line 26

Schedule of Active Participant Data as of January 1, 2018

Number and average plan compensation limited by IRC §401(a)(17) distributed by attained age and attained years of credited service

	Attained Years of Credited Service[1]										
	Under 1	1-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40 & Over	Total
Under 25	0	0	0	0	0	0	0	0	0	0	0
	-	-	-	-	-	-	-	-	-	-	-
25-29	0	0	0	0	0	0	0	0	0	0	0
	-	-	-	-	-	-	-	-	-	-	-
30-34	0	0	1	7	0	0	0	0	0	0	8
	-	-	-	-	-	-	-	-	-	-	-
35-39	0	4	6	58	18	1	0	0	0	0	87
	-	-	-	128,761	-	-	-	-	-	-	118,983
40-44	0	1	9	67	96	9	0	0	0	0	182
	-	-	-	129,365	135,550	-	-	-	-	-	129,652
45-49	0	2	9	77	167	50	10	2	0	0	317
	-	-	-	129,660	140,090	157,550	-	-	-	-	137,676
50-54	0	0	9	96	222	126	90	32	1	0	576
	-	-	-	127,119	130,055	154,153	158,384	136,899	-	-	138,986
55-59	0	4	2	84	176	100	167	141	39	0	713
	-	-	-	133,453	131,986	154,347	164,270	170,302	151,419	-	151,167
60-64	0	3	4	56	94	40	47	62	26	4	336
	-	-	-	114,065	130,837	156,034	166,849	178,246	175,217	-	147,095
65-69	0	0	0	16	23	9	10	10	3	1	72
	-	-	-	-	130,191	-	-	-	-	-	149,501
70 & over	1	1	1	6	3	2	0	2	1	1	18
	-	-	-	-	-	-	-	-	-	-	-
Total	1	15	41	467	799	337	324	249	70	6	2,309
	-	-	91,403	128,319	132,966	154,074	161,008	167,898	164,871	-	142,648

[1] Age and service for purposes of determining category are based on exact (not rounded) values.

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

See Schedule SB, Part V - Statement of Actuarial Assumptions/Methods 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.

x	q_x^r	l_x	${}_{x-50}p_{50} = l_x / l_{50}$	$q_x^r * l_x / l_{50}$	$x * q_x * l_x / l_{50}$
50	0.02	1,000,000	1.000000	0.020000	1.000000
51	0.02	980,000	0.980000	0.019600	0.999600
52	0.02	960,400	0.960400	0.019208	0.998816
53	0.02	941,192	0.941192	0.018824	0.997664
54	0.02	922,368	0.922368	0.018447	0.996158
55	0.04	903,921	0.903921	0.036157	1.988626
56	0.03	867,764	0.867764	0.026033	1.457843
57	0.04	841,731	0.841731	0.033669	1.919147
58	0.05	808,062	0.808062	0.040403	2.343379
59	0.09	767,659	0.767659	0.069089	4.076268
60	0.22	698,569	0.698569	0.153685	9.221116
61	0.15	544,884	0.544884	0.081733	4.985690
62	0.18	463,152	0.463152	0.083367	5.168771
63	0.20	379,784	0.379784	0.075957	4.785282
64	0.15	303,827	0.303827	0.045574	2.916743
65	0.20	258,253	0.258253	0.051651	3.357293
66	0.20	206,603	0.206603	0.041321	2.727155
67	0.20	165,282	0.165282	0.033056	2.214780
68	0.20	132,226	0.132226	0.026445	1.798269
69	0.20	105,781	0.105781	0.021156	1.459772
70	0.20	84,624	0.084624	0.016925	1.184742
71	0.20	67,700	0.067700	0.013540	0.961334
72	0.20	54,160	0.054160	0.010832	0.779899
73	0.20	43,328	0.043328	0.008666	0.632585
74	0.20	34,662	0.034662	0.006932	0.513000
75	1.00	27,730	0.027730	0.027730	2.079730
Average age at retirement					61.563661
Rounded for Schedule SB item 22					62

Schedule SB, Part V
Summary of Plan Provisions

Plan Provisions

The plan was amended and restated effective January 1, 2017.

Covered employees	Employed or on an approved leave of absence with the University of California on September 30, 2007; Former participant (or eligible to become a participant) in the University of California Retirement Plan (UCRP); and Elected to accept employment with LLNS under Total Compensation Package 1 ("TCP1") as of October 1, 2007 (or later date if on an Approved Leave of Absence).
Participation Date	Later of October 1, 2007 or date of becoming an Eligible Employee.

Definitions

Highest Average Plan Compensation (HAPC)	Monthly amount that is the highest average Full-Time Equivalent Compensation during 36 continuous months. For inactive Members, HAPC is adjusted each July 1 for movement in the CPI but not more than 2.0%. However, if movement in the CPI exceeds 4.0%, then HAPC is adjusted by 2.0% plus 75% of the amount that CPI movement exceeds 4.0%. The maximum adjustment is 6%. No adjustment to HAPC is provided after the earlier of a Member's retirement date and Normal Retirement Date.
Full-Time Equivalent Compensation	100% of Plan Compensation (base salary excluding overtime or bonus pay) which a Member would earn from the Employer for that calendar month.
Credited Service	One year for each plan year in which a Member earns 2,080 hours or more and prorated for plan years in which a Member earns less than 2,080 hours. For Members who retire within 120 days of termination of service, proportional Credited Service will be granted for accumulated sick leave based on a 2,080-hour year. Includes Credited Service earned under the UCRP.
Period of Service	Years and complete months from employment commencement to date of termination.

Actuarial Equivalent Mortality	1994 GAR Mortality Table for males (set back three years for Members and set back five years for beneficiaries).
Actuarial Equivalent Interest	7.5%
Actuarial Equivalent COLA	2% per year.
Normal Retirement Date (NRD)	First of month coinciding with or next following the attainment of age 60 with five years of Credited Service.

Eligibility for Benefits

Normal Retirement	Age 60 and completion of five-year Period of Service.
Early Retirement	Age 50 and completion of five-year Period of Service.
Late (or Deferred) Retirement	Any time after eligibility for Normal Retirement.
Vested Termination	Completion of five-year Period of Service.
Disability	Completion of five-year Period of Service and eligible for and receives disability income under the Employer's Defined Benefit Disability Program.
Preretirement Death Benefit	Active with Period of Service of two years or inactive vested (including Members on Disability) with a spouse on date of death.
Basic Death Benefit	Active with Period of Service of two years or inactive Vested (including Members on Disability).

SCHEDULE SB ATTACHMENTS

Benefits Paid Upon the Following Events

Basic Retirement Income

Monthly annuity is the product of:

a. 2.5%

b. Highest Average Plan Compensation less $133; and

c. Years of Credited Service.

The product of (a) and (c) is limited to 100%.

Social Security Supplement

Monthly annuity payable until age 65 is the product of:

a. 2.5%

b. $133; and

c. Years of Credited Service.

The product of (a) and (c) is limited to 100%.

Adjustment for Members With Non Coordinated Benefits September 30, 2007

For Members entitled to Social Security benefits:

- In calculation of Basic Retirement Income, offset $133 only for Credited Service earned after October 1, 2007.
- Calculation of Social Security Supplement based on Credited Service after October 1, 2007.

For Members not entitled to Social Security benefits:

- Basic Retirement Income will be calculated without the $133 offset.
- Neither the Member nor the Member's spouse shall be eligible for the Social Security Supplement.

Early Retirement

Normal Retirement benefits and Social Security Supplements are reduced according to the following table:

Percentage of Age 60 Benefit	
Age	Percentage
50	44.0%
51	49.6%
52	55.2%
53	60.8%
54	66.4%
55	72.0%
56	77.6%
57	83.2%
58	88.8%
59	94.4%
60	100.0%

Late (or Deferred) Retirement

Normal Retirement benefit actuarially increased for those months in which the Member was credited for less than 40 hours of service and for those months after April 1 of the calendar year following the year the Member turns age 70½ regardless of the hours of service.

Vested Termination

Early Retirement benefit commencing at Early Retirement Date.

Disability

Early or Normal Retirement benefit. Credited Service continues to accrue until earlier of the date the Member ceases to be Disabled, retires, or reaches Normal Retirement Date.

Maximum Basic Retirement Income is greater of:

- Basic Retirement Income under vested Termination; or
- 40% of final complete month of Full-Time Equivalent Compensation. The 40% factor is increased to 60% for Members with non-coordinated benefits under the UCRP.

Preretirement Death	Not Early Retirement eligible: Amount that would be paid if participant had Terminated on the earlier of date of Termination or date of death, survived until the spouse's date of Retirement, elected a 50% joint and contingent annuity naming the spouse as the Contingent Annuitant, and then died. The spouse's date of Retirement may not be earlier than the date the Member would have attained 50 nor later than the Member's Normal Retirement Date. Retirement eligible: Same as above, except that Member is assumed to have elected a 100% joint and contingent annuity.
Basic death benefit	$7,500. However, active Members who were participants in the UCRP prior to October 1, 1990 receive the greater of $7,500 or $1,500 plus one month of Full-Time Equivalent Compensation.

Other Plan Provisions

Normal Forms of Payment	50% joint and contingent annuity for married participants, single life annuity for unmarried participants.
Optional Forms of Payment of the Basic Retirement Income	100% joint and contingent, 75% joint and contingent, 66.67% joint and contingent, 50% joint and contingent, and single life annuity.
Calculation of Joint and Contingent Form	Actuarial Equivalent of the single life annuity increased by 2.4%. For Members with non-coordinated benefits on September 30, 2007, the 2.4% factor is replaced by 4.8%, except that if such Members are eligible for Social Security benefits, the factor shall be 4.8% for Credited Service earned prior to October 1, 2007 and 2.4% for Credited Service earned after October 1, 2007.
Employee Contributions	Beginning June 3, 2012, a participant must contribute 5% of earnings. Beginning June 30, 2013, a participant must contribute 7% of earnings.

SCHEDULE SB ATTACHMENTS

Cost of Living Adjustment Applied to Basic Retirement Income	The monthly benefit shall be adjusted on each July 1 for movement in the CPI but not more than 2.0%. However, if movement in the CPI exceeds 4.0%, then the benefit is adjusted by 2.0% plus 75% of the amount that CPI movement exceeds 4.0%. The maximum adjustment is 6%. No adjustment shall be made if it will decrease the benefit.
Maximum on Benefits and Pay	All benefits and pay for any calendar year may not exceed the maximum limitations for that year as defined in the Internal Revenue Code. The plan provides for increasing the dollar limits automatically as such changes become effective.

Future Plan Changes

No future plan changes were recognized.

Changes in Benefits Valued Since Prior Year

None.

SCHEDULE SB ATTACHMENTS

Schedule SB – Statement by Enrolled Actuary

Plan Sponsor	Lawrence Livermore National Security, LLC
EIN/PN	20-5624386/003
Plan Name	LLNS Defined Benefit Pension Plan
Valuation Date	January 1, 2018
Enrolled Actuary	Erik A. Heiskanen
Enrollment Number	17-07772

The actuarial assumptions that are not mandated by IRC § 430 and regulations, 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 Item 18 of Schedule SB were listed in reliance on information provided by the plan administrator and/or trustee.

Schedule SB, Line 24
Change in Actuarial Assumptions

The retirement rates, termination rates, rate of compensation increase, and percent married assumptions were updated based on an experience study conducted October 2017.

Plan Name:	LLNS Defined Benefit Pension Plan
EIN / PN:	20-5624386/003
Plan Sponsor:	Lawrence Livermore National Security, LLC
Valuation Date	January 1, 2018