

Public Service  
Electric and Gas  
Company

**Steven E. Miltenberger**

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Vice President and Chief Nuclear Officer

**MAR 21 1994**  
**NLR-N94057**

United States Nuclear Regulatory Commission  
Document Control Desk  
Washington, DC 20555

Gentlemen:

**TECHNICAL SPECIFICATION 6.9.1.5 ANNUAL REPORTS  
FINAL REGULATORY GUIDE 1.16 REPORT SUBMITTAL  
SALEM AND HOPE CREEK GENERATING STATIONS  
DOCKET NOS. 50-272, 50-311, AND 50-354**

Public Service Electric and Gas Company (PSE&G) hereby submits the final Regulatory Guide 1.16 Reports for Salem Unit 1, Salem Unit 2 and Hope Creek for the 1993 calendar year. The information contained in Enclosures 1, 2 and 3 of this letter replaces the preliminary information previously provided in PSE&G's letter NLR-N94035, dated February 25, 1994. As previously stated in the February 25th letter, PSE&G had experienced software problems that delayed the uploading and validation of the fourth quarter TLD data.

The enclosures of this letter contain tabulations on an annual basis of the number of station, utility and other personnel receiving exposures greater than 100 mrem/year and their associated man rem exposures according to work and job function for each unit. These tabulations are intended to supplement the requirements of 10CFR20, Section 20.407.

Should you have any questions regarding this submittal, please contact us.

Sincerely,



Enclosures (3)

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**ENCLOSURE 1**

**PUBLIC SERVICE ELECTRIC  
AND GAS COMPANY  
HANCOCK'S BRIDGE, NJ 08038**

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**SALEM UNIT 1  
STANDARD FORMAT FOR REPORTING  
NUMBER OF PERSONNEL AND  
PERSON-REM BY WORK AND JOB FUNCTION**

**NUMBER OF PERSONNEL  
( > 100 MREM)**

**TOTAL PERSON-MREM**

<b>WORK AND JOB FUNCTION (PERSONNEL GROUPING)</b>	<b>STATION EMPLOYEES</b>	<b>UTILITY EMPLOYEES</b>	<b>CONTRACT WORKERS &amp; OTHERS</b>	<b>STATION EMPLOYEES</b>	<b>UTILITY EMPLOYEES</b>	<b>CONTRACT WORKERS &amp; OTHERS</b>
<b>Reactor Operations and Surveillance</b>						
Maintenance	2	0	2	1203	385	2433
Operating	0	0	0	112	69	10
Health Physics	0	0	0	328	29	85
Chemistry	0	0	0	6	0	0
Supervisory	0	0	0	45	0	28
Engineering	0	0	0	137	80	17
I&C	0	0	0	64	0	345
Security	0	0	0	0	0	0
<b>Routine Maintenance</b>						
Maintenance	1	0	26	3633	939	9857
Operating	0	0	0	1716	179	43
Health Physics	12	0	0	2006	193	0
Chemistry	0	0	0	67	1	0
Supervisory	0	0	0	31	7	42
Engineering	1	0	0	439	426	45
I&C	0	0	0	36	27	105
Security	0	0	0	12	1	147
<b>Inservice Inspection</b>						
Maintenance	3	8	79	1135	1765	51148
Operating	0	2	0	46	590	0
Health Physics	6	0	21	1621	4	9625
Chemistry	0	0	0	0	63	0
Supervisory	0	0	6	87	0	4341
Engineering	0	2	2	0	650	933
I&C	0	0	0	0	0	2
Security	0	0	0	0	0	0
<b>Special Maintenance</b>						
Maintenance	4	0	6	912	84	1047
Operating	0	0	0	127	9	10
Health Physics	0	0	0	49	0	62
Chemistry	0	0	0	0	0	0
Supervisory	0	0	0	0	0	0
Engineering	0	0	0	0	7	0
I&C	0	0	0	0	9	0
Security	0	0	0	0	0	47

**ENCLOSURE 1 (CONT'D)**

**PUBLIC SERVICE ELECTRIC  
AND GAS COMPANY  
HANCOCK'S BRIDGE, NJ 08038**

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**SALEM UNIT 1  
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NUMBER OF PERSONNEL AND  
PERSON-REM BY WORK AND JOB FUNCTION**

**NUMBER OF PERSONNEL  
( > 100 MREM)**

**TOTAL PERSON-MREM**

<b>WORK AND JOB FUNCTION (PERSONNEL GROUPING)</b>	<b>STATION EMPLOYEES</b>	<b>UTILITY EMPLOYEES</b>	<b>CONTRACT WORKERS &amp; OTHERS</b>	<b>STATION EMPLOYEES</b>	<b>UTILITY EMPLOYEES</b>	<b>CONTRACT WORKERS &amp; OTHERS</b>
<b>Waste Processing</b>						
Maintenance	0	0	0	32	20	4
Operating	0	0	0	6	8	0
Health Physics	0	0	6	1256	0	2135
Chemistry	0	0	0	0	0	0
Supervisory	0	0	0	0	0	0
Engineering	0	0	0	3	0	0
I&C	0	0	0	0	0	0
Security	0	0	0	0	0	0
<b>Refueling</b>						
Maintenance	46	10	284	16651	5534	119406
Operating	15	1	2	4784	892	679
Health Physics	29	0	41	9711	128	15693
Chemistry	0	0	0	111	10	0
Supervisory	1	0	5	725	6	2295
Engineering	0	2	3	423	1045	1280
I&C	0	0	11	226	17	3157
Security	0	0	0	4	1	59
<b>Total</b>						
Maintenance	56	18	397	23566	8727	183895
Operating	15	3	2	6791	1747	742
Health Physics	47	0	68	14971	354	27600
Chemistry	0	0	0	184	74	0
Supervisory	1	0	11	888	13	6706
Engineering	1	4	5	1002	2208	2275
I&C	0	0	11	326	53	3609
Security	0	0	0	16	2	253
<b>Grand Total:</b>	<b>120</b>	<b>25</b>	<b>494</b>	<b>47744</b>	<b>13178</b>	<b>225080</b>

**Personnel Exposure and Monitoring Report for  
Exposure Year: 1993**

**NRC Docket Number: 50-272**

**Licensee: Public Service Electric and Gas Company**

**Date: 03/10/94**

**Total Exposure for Salem Unit 1 by TLD during 1993 was 292.992 person-rem.**

**ENCLOSURE 2**

**PUBLIC SERVICE ELECTRIC  
AND GAS COMPANY  
HANCOCK'S BRIDGE, NJ 08038**

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**SALEM UNIT 2  
STANDARD FORMAT FOR REPORTING  
NUMBER OF PERSONNEL AND  
PERSON-REM BY WORK AND JOB FUNCTION**

**NUMBER OF PERSONNEL  
( > 100 MREM)**

**TOTAL PERSON-MREM**

<b>WORK AND JOB FUNCTION (PERSONNEL GROUPING)</b>	<b>STATION EMPLOYEES</b>	<b>UTILITY EMPLOYEES</b>	<b>CONTRACT WORKERS &amp; OTHERS</b>	<b>STATION EMPLOYEES</b>	<b>UTILITY EMPLOYEES</b>	<b>CONTRACT WORKERS &amp; OTHERS</b>
<b>Reactor Operations and Surveillance</b>						
Maintenance	1	0	3	989	31	3529
Operating	0	0	0	75	14	173
Health Physics	0	0	0	210	5	56
Chemistry	0	0	0	6	1	0
Supervisory	0	0	0	53	0	3
Engineering	0	0	0	98	20	5
I&C	0	0	0	29	0	51
Security	0	0	0	0	0	0
<b>Routine Maintenance</b>						
Maintenance	3	0	25	2555	601	9680
Operating	0	0	0	1377	96	58
Health Physics	5	0	0	945	163	0
Chemistry	0	0	0	96	0	0
Supervisory	0	0	0	29	0	25
Engineering	1	0	0	282	220	17
I&C	1	0	3	182	6	762
Security	0	0	0	12	1	39
<b>Inservice Inspection</b>						
Maintenance	0	2	0	0	741	96
Operating	0	0	0	0	19	0
Health Physics	0	0	0	0	0	0
Chemistry	0	0	0	0	0	0
Supervisory	0	0	0	0	0	0
Engineering	0	0	0	0	47	0
I&C	0	0	0	0	0	0
Security	0	0	0	0	0	0
<b>Special Maintenance</b>						
Maintenance	0	0	0	3	3	176
Operating	0	0	0	1	0	17
Health Physics	0	0	0	4	0	42
Chemistry	0	0	0	0	0	0
Supervisory	0	0	0	0	0	0
Engineering	0	0	0	0	0	0
I&C	0	0	0	0	0	0
Security	0	0	0	0	0	47

**ENCLOSURE 2 (CONT'D)**

**PUBLIC SERVICE ELECTRIC  
AND GAS COMPANY  
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**SALEM UNIT 2  
STANDARD FORMAT FOR REPORTING  
NUMBER OF PERSONNEL AND  
PERSON-REM BY WORK AND JOB FUNCTION**

**NUMBER OF PERSONNEL  
( > 100 MREM)**

**TOTAL PERSON-MREM**

<b>WORK AND JOB FUNCTION (PERSONNEL GROUPING)</b>	<b>STATION EMPLOYEES</b>	<b>UTILITY EMPLOYEES</b>	<b>CONTRACT WORKERS &amp; OTHERS</b>	<b>STATION EMPLOYEES</b>	<b>UTILITY EMPLOYEES</b>	<b>CONTRACT WORKERS &amp; OTHERS</b>
<b>Waste Processing</b>						
Maintenance	0	0	0	0	0	0
Operating	0	0	0	0	0	0
Health Physics	0	0	4	1324	0	2066
Chemistry	0	0	0	4	0	0
Supervisory	0	0	0	0	0	0
Engineering	0	0	0	0	0	0
I&C	0	0	0	0	0	0
Security	0	0	0	0	0	0
<b>Refueling</b>						
Maintenance	17	4	164	6129	2371	60622
Operating	2	1	4	2362	547	1003
Health Physics	19	0	30	4666	18	6471
Chemistry	0	0	0	18	12	0
Supervisory	1	0	3	331	3	1277
Engineering	1	1	2	307	959	951
I&C	0	0	5	81	23	1480
Security	0	0	0	2	4	95
<b>Total</b>						
Maintenance	21	6	192	9676	3747	74103
Operating	2	1	4	3815	676	1251
Health Physics	24	0	34	7149	186	8635
Chemistry	0	0	0	124	13	0
Supervisory	1	0	3	413	3	1305
Engineering	2	1	2	687	1246	973
I&C	1	0	8	292	29	2293
Security	0	0	0	14	5	181
<b>Grand Total:</b>	<b>51</b>	<b>8</b>	<b>243</b>	<b>22170</b>	<b>5905</b>	<b>88741</b>

**Personnel Exposure and Monitoring Report for  
Exposure Year: 1993**

**NRC Docket Number: 50-311**

**Licensee: Public Service Electric and Gas Company**

**Date: 03/10/94**

**Total Exposure for Salem Unit 2 by TLD during 1993 was 114.728 person-rem.**

**ENCLOSURE 3**

**PUBLIC SERVICE ELECTRIC  
AND GAS COMPANY  
HANCOCK'S BRIDGE, NJ 08038**

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**HOPE CREEK  
STANDARD FORMAT FOR REPORTING  
NUMBER OF PERSONNEL AND  
PERSON-REM BY WORK AND JOB FUNCTION**

**NUMBER OF PERSONNEL  
( > 100 MREM)**

**TOTAL PERSON-MREM**

<b>WORK AND JOB FUNCTION (PERSONNEL GROUPING)</b>	<b>STATION EMPLOYEES</b>	<b>UTILITY EMPLOYEES</b>	<b>CONTRACT WORKERS &amp; OTHERS</b>	<b>STATION EMPLOYEES</b>	<b>UTILITY EMPLOYEES</b>	<b>CONTRACT WORKERS &amp; OTHERS</b>
<b>Reactor Operations and Surveillance</b>						
Maintenance	8	0	2	2018	296	1007
Operating	46	0	0	13600	90	24
Health Physics	1	0	0	1226	20	39
Chemistry	7	0	0	1788	3	2
Supervisory	0	0	0	63	2	1
Engineering	0	2	0	82	653	16
I&C	5	0	0	1049	5	0
Security	0	0	0	0	0	77
<b>Routine Maintenance</b>						
Maintenance	3	0	0	2341	257	115
Operating	2	0	0	795	176	7
Health Physics	5	0	0	2160	41	8
Chemistry	0	0	0	1	0	0
Supervisory	0	0	0	0	4	1
Engineering	0	0	0	35	10	2
I&C	2	0	0	1741	4	0
Security	0	0	0	0	0	0
<b>Inservice Inspection</b>						
Maintenance	0	0	0	142	104	344
Operating	0	0	0	18	33	1
Health Physics	0	0	0	99	6	0
Chemistry	0	0	0	0	38	0
Supervisory	0	0	0	4	0	0
Engineering	0	0	0	0	60	0
I&C	0	0	0	1	1	0
Security	0	0	0	0	0	0
<b>Special Maintenance</b>						
Maintenance	53	3	15	20871	1760	5478
Operating	31	0	3	9811	65	585
Health Physics	23	1	0	6159	134	192
Chemistry	0	0	0	204	0	0
Supervisory	0	0	0	218	0	1
Engineering	1	2	1	246	714	305
I&C	28	0	0	9158	0	1
Security	0	0	0	0	0	0

**ENCLOSURE 3 (CONT'D)**

**PUBLIC SERVICE ELECTRIC  
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**HOPE CREEK  
STANDARD FORMAT FOR REPORTING  
NUMBER OF PERSONNEL AND  
PERSON-REM BY WORK AND JOB FUNCTION**

WORK AND JOB FUNCTION (PERSONNEL GROUPING)	NUMBER OF PERSONNEL ( > 100 MREM)			TOTAL PERSON-MREM		
	STATION EMPLOYEES	UTILITY EMPLOYEES	CONTRACT WORKERS & OTHERS	STATION EMPLOYEES	UTILITY EMPLOYEES	CONTRACT WORKERS & OTHERS
<b>Waste Processing</b>						
Maintenance	0	0	0	157	199	3
Operating	4	0	0	1017	89	0
Health Physics	10	0	0	4623	9	0
Chemistry	0	0	0	26	0	0
Supervisory	0	0	0	132	0	0
Engineering	0	0	0	0	402	5
I&C	0	0	0	54	0	0
Security	0	0	0	0	0	0
<b>Refueling</b>						
Maintenance	8	0	0	2664	51	183
Operating	0	0	0	615	4	19
Health Physics	0	0	0	177	0	0
Chemistry	0	0	0	0	0	0
Supervisory	0	0	0	14	0	0
Engineering	0	0	0	8	173	0
I&C	0	0	0	14	0	0
Security	0	0	0	0	0	0
<b>Total</b>						
Maintenance	72	3	17	28193	2667	7130
Operating	83	0	3	25856	457	636
Health Physics	39	1	0	14444	210	239
Chemistry	7	0	0	2019	41	2
Supervisory	0	0	0	431	6	3
Engineering	1	4	1	371	2012	328
I&C	35	0	0	12017	10	1
Security	0	0	0	0	0	77
<b>Grand Total:</b>	<b>237</b>	<b>8</b>	<b>21</b>	<b>83331</b>	<b>5403</b>	<b>8416</b>

**Personnel Exposure and Monitoring Report for  
Exposure Year: 1993**

**NRC Docket Number: 50-354**

**Licensee: Public Service Electric and Gas Company**

**Date: 03/10/94**

**Total Exposure for Hope Creek by TLD during 1993 was 97.895 person-rem.**