



STATE OF RHODE ISLAND AND PROVIDENCE PLANTATIONS

Rhode Island Atomic Energy Commission  
NUCLEAR SCIENCE CENTER  
16 Reactor Road  
Narragansett, R.I. 02882-1165

August 18, 2006

Docket No. 50-193

Mr. Daniel Hughes, Project Manager  
Non-Power Reactors, Decommissioning and  
Environmental Project Directorate  
Division of Reactor Projects - III/IV/V  
U. S. Nuclear Regulatory Commission (NRC)  
Washington, D. C. 20555

Dear Mr. Hughes :

This letter and enclosures constitute the annual report required by the RINSC Technical Specifications (Section 6.8.4). Enclosure 1 provides reactor operating statistics. Enclosure 2 provides information pertaining to inadvertent reactor shutdowns or scrams. Enclosure 3 discusses maintenance operations performed during the reporting period. Enclosure 4 describes changes to the facility carried out under the conditions of Section 50.59 of Chapter 10 of the Code of Federal Regulations. Lastly, Enclosure 5 summarizes the radiological controls information. If there are any questions regarding this information, please call me at 401-789-9391.

Sincerely,

Michael J. Davis  
Reactor Supervisor

Enclosures (5)

Copy to :

Mr. Craig Bassett, USNRC Region I  
Dr. Harry Knickle, Chairman NRSC  
Dr. Stephen Mecca, Chairman RIAEC  
Dr. Alfred L. Allen, RIAEC  
Dr. Peter Gromet, RIAEC  
Dr. Andrew Kadak, RIAEC  
Dr. Bahram Nassersharif, RIAEC

A020

ENCLOSURE 1

Technical Specifications  
Section 6.8.4.a

Month	Reactor Critical (hours)	Energy Generated (MWh)	Energy Generated (MWd)
July-05	14.28	28.57	1.19
August-05	30.82	37.20	1.55
September-05	23.77	47.44	1.98
October-05	69.98	139.97	5.83
November-05	21.85	43.70	1.82
December-05	36.67	71.43	2.98
January-06	17.08	30.56	1.27
February-06	28.72	50.82	2.12
March-06	20.75	34.12	1.42
April-06	20.95	41.90	1.75
May-06	19.45	38.90	1.62
June-06	25.83	51.67	2.15
<b>2005-06 Totals:</b>	<b>330.15</b>	<b>616.28</b>	<b>25.68</b>
<b>Total Energy Output Since Initial Criticality:</b>		<b>60,646.10</b>	<b>2,526.92</b>

ENCLOSURE 1

(Continued)

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**Monthly Information Sheet**

NSC-78

<b>Month:</b> Jul-2005	<b>Revised</b> 3/22/2004
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<b>Cumulative MWH's</b>		<b>TOTAL</b>	<b>LEU</b>
<b>Start:</b> 60,006.74	<b>End:</b> 60,035.31	10,327.89	

\*added HEU = 49698.01

Run No.	Day (1-31)	Ave Pwr Level (MW)	System On Time (hhmm)	Start Time (hhmm)	S/D Time (hhmm)	Operating Time (hrs)	Todays total MWH	Stack Monitor max CPM	Ar-41 Released	
									Limit = 4E-4 uCi/cc	
									uCi/cc	CI/day
7883	1	2.00	1034	1153	1215	0.37	0.73	5,000	2.25E-05	0.10
7884	7	2.00	0900	0935	1055	1.33	2.67	10,000	4.49E-05	0.37
7885	12	2.00	0948	0948	1057	1.15	2.30	9,000	4.04E-05	0.32
7886	14	2.00	0840	1019	1400	3.68	7.37	10,500	4.71E-05	1.03
7887	19	2.00	0840	0946	1105	1.32	2.63	10,500	4.71E-05	0.37
7888	21	2.00	0840	0951	1148	1.95	3.90	10,500	4.71E-05	0.55
7889	25	2.00	0850	0957	1126	1.48	2.97	10,000	4.49E-05	0.42
7890	26	2.00	0838	1034	1334	3.00	6.00	10,000	4.49E-05	0.84
<b>Totals:</b>						14.28	28.57			4.00

**SUMMARY**

<b>Operating</b>	<b>Max.</b>	<b>Actual</b>		<b>Max.</b>	<b>Actual</b>
Hours	154.0	14.3	<b>MWH's:</b>	308.0	28.6
Percentage		9%			9%
Stack Releases	4.0 curies				





ENCLOSURE 1

(Continued)

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**Monthly Information Sheet**

NSC-78

<b>Month:</b> Oct-2005	<b>Revised</b> 3/22/2004
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<b>Cumulative MWH's</b>		<b>TOTAL</b>		<b>LEU</b>
<b>Start:</b> 60,143.04	<b>End:</b> 60,283.01	60,283.01	10,575.59	

\*added HEU = 49698.01

Run No.	Day (1-31)	Ave Pwr Level (MW)	System On Time (hhmm)	Start Time (hhmm)	S/D Time (hhmm)	Operating Time (hrs)	Today's total MWH	Stack Monitor max CPM	Ar-41 Released	
									Limit = 4E-4 uCi/cc	
									uCi/cc	CI/day
7916	3	2.00	0900	0953	1659	7.10	14.20	5,500	4.44E-05	1.99
7917	4	2.00	0823	0948	1032	0.73	1.47	3,000	2.42E-05	0.21
7918	5	2.00	0825	0921	1621	7.00	14.00	5,000	4.04E-05	1.96
7919	6	2.00	0825	0938	1045	1.12	2.23	4,500	3.63E-05	0.31
7920	7	2.00	0823	0920	1623	7.05	14.10	3,200	2.58E-05	1.97
7921	11	2.00	0825	0935	1126	1.85	3.70	3,200	2.58E-05	0.52
7922	12	2.00	0830	0918	1633	7.25	14.50	4,000	3.23E-05	2.03
7923	13	2.00	0850	1004	1028	0.40	0.80	4,000	3.23E-05	0.11
7924	14	2.00	0835	1002	1626	6.40	12.80	4,000	3.23E-05	1.79
7925	17	2.00	0825	0918	1628	7.17	14.33	6,000	4.84E-05	2.01
7926	18	2.00	0825	0949	1411	4.37	8.73	5,000	4.04E-05	1.22
7927	19	2.00	0755	1039	1643	6.07	12.13	6,000	4.84E-05	1.70
7928	20	2.00	0830	0924	1633	7.15	14.30	4,500	3.63E-05	2.00
7929	24	2.00	0830	0915	1249	3.57	7.13	4,000	3.23E-05	1.00
7930	25	2.00	0835	0925	1025	1.00	2.00	4,000	3.23E-05	0.28
7931	27	2.00	0935	1039	1225	1.77	3.53	5,000	4.04E-05	0.49
<b>Totals:</b>						69.98	139.97			19.60

**SUMMARY**

<b>Operating</b>	<b>Max.</b>	<b>Actual</b>		<b>Max.</b>	<b>Actual</b>
<b>Hours</b>	154.0	70.0	<b>MWH's:</b>	308.0	140.0
<b>Percentage</b>		45%			45%
<b>Stack Releases</b>					

ENCLOSURE 1

(Continued)

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**Monthly Information Sheet**

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<b>Month: Nov-2005</b>	<b>Revised 3/22/2004</b>
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Cumulative MWH's		TOTAL	LEU
<b>Start: 60,283.01</b>	<b>End: 60,326.71</b>	<b>60,326.71</b>	<b>10,619.29</b>

\*added HEU = 49698.01

Run No.	Day (1-31)	Ave Pwr Level (MW)	System On Time (hhmm)	Start Time (hhmm)	S/D Time (hhmm)	Operating Time (hrs)	Today's total MWH	Stack Monitor max CPM	Ar-41 Released	
									Limit = 4E-4 uCi/cc	
									uCi/cc	Ci/day
7932	1	2.00	0825	0922	1141	2.32	4.63	4,000	3.23E-05	0.65
7933	3	2.00	0840	0950	1100	1.17	2.33	5,000	4.04E-05	0.33
7934	4	2.00	0948	1159	1241	0.70	1.40	4,000	3.23E-05	0.20
7935	7	2.00	1350	1453	1502	0.15	0.30	2,000	1.61E-05	0.04
7936	8	2.00	0825	0918	1142	2.40	4.80	5,000	4.04E-05	0.67
7937	10	2.00	0828	0935	1235	3.00	6.00	5,000	4.04E-05	0.84
7938	15	2.00	0835	0935	1644	7.15	14.30	6,000	4.84E-05	2.00
7939	17	2.00	0805	0854	1142	2.80	5.60	6,000	4.84E-05	0.78
7940	22	2.00	0830	0922	1132	2.17	4.33	6,000	4.84E-05	0.61
<b>Totals:</b>						21.85	43.70			6.12

**SUMMARY**

<b>Operating</b>	<b>Max.</b>	<b>Actual</b>		<b>Max.</b>	<b>Actual</b>
<b>Hours</b>	133.0	21.9	<b>MWH's:</b>	266.0	43.7
<b>Percentage</b>		16%			16%
<b>Stack Releases</b>	6.1 curies				

ENCLOSURE 1

(Continued)

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**Monthly Information Sheet**

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<b>Month:</b> Dec-2005	<b>Revised</b> 3/22/2004
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Cumulative MWH's		TOTAL	LEU
<b>Start:</b> 60,326.71	<b>End:</b> 60,398.14	10,690.72	

\*added HEU = 49698.01

Run No.	Day (1-31)	Ave Pwr Level (MW)	System On Time (hhmm)	Start Time (hhmm)	S/D Time (hhmm)	Operating Time (hrs)	Todays total MWH	Stack Monitor max CPM	Ar-41 Released	
									Limit = 4E-4 uCi/cc	
									uCi/cc	CI/day
7942	7	2.00	0850	0916	1616	7.00	14.00	5,000	4.04E-05	1.96
7943	9	2.00	0835	0925	1425	5.00	10.00	4,000	3.23E-05	1.40
7943	9	2.00	1425	1503	1703	2.00	4.00	4,000	3.23E-05	0.56
7944	13	2.00	0825	0910	1030	1.33	2.67	5,000	4.04E-05	0.37
7945	14	2.00	0820	0905	1605	7.00	14.00	6,000	4.84E-05	1.96
7946	15	2.00	0825	0917	1237	3.33	6.67	5,500	4.44E-05	0.93
7947	21	2.00	0830	0912	1612	7.00	14.00	5,000	4.04E-05	1.96
7948	23	0.10	0915	1010	1110	1.00	0.10	300	2.42E-06	0.01
7949	28	2.00	0830	0920	1220	3.00	6.00	4,000	3.23E-05	0.84
<b>Totals:</b>	29	0.10	925.00	0938	1048	36.67	71.43	200.00	1.61E-06	10.00

**SUMMARY**

Operating	Max.	Actual		Max.	Actual
Hours	154.0	36.7	MWH's:	308.0	71.4
Percentage		24%			23%
Stack Releases	10.0 curies				



ENCLOSURE 1

(Continued)

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**Monthly Information Sheet**

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<b>Month:</b> Jan-06	<b>Revised</b> 3/22/2004
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**Cumulative MWH's**

TOTAL LEU

<b>Start:</b> 60,398.14	<b>End:</b> 60,428.70	10,730.69
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\*added HEU = 49698.01

Run No.	Day (1-31)	Ave Pwr Level (MW)	System On Time (hhmm)	Start Time (hhmm)	S/D Time (hhmm)	Operating Time (hrs)	Today's total MWH	Stack Monitor max CPM	Ar-41 Released	
									Limit = 4E-4 uCi/cc	
									uCi/cc	CI/day
7951	3	0.10	1015	1052	1119	0.45	0.05	300	9.12E-07	0.01
7952	3	0.10	1345	1422	1435	0.22	0.02	200	6.08E-07	0.00
7953	4	2.00	0825	0955	1255	3.00	6.00	5,000	1.52E-05	0.84
7954	10	2.00	0835	0930	1230	3.00	6.00	3,800	1.16E-05	0.84
7955	12	2.00	0825	0910	1210	3.00	6.00	3,500	1.06E-05	0.84
7956	19	2.00	0908	1035	1204	1.48	2.97	4,000	1.22E-05	0.42
7957	23	0.10	0945	1040	1154	1.23	0.12	300	9.12E-07	0.02
7978	24	2.00	0830	0920	1140	2.33	4.67	4,000	1.22E-05	0.65
7979	26	2.00	0830	0920	1110	1.83	3.67	4,000	1.22E-05	0.51
7980	31	2.00	0830	0913	0945	0.53	1.07	4,000	1.22E-05	0.15
<b>Totals:</b>						17.08	30.56			4.28

**SUMMARY**

Operating	Max.	Actual		Max.	Actual
Hours	147.0	17.1	MWH's:	294.0	30.6
Percentage		12%			10%
Stack Releases	4.3 curies				

ENCLOSURE 1

(Continued)

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**Monthly Information Sheet**

NSC-78

<b>Month:</b> Feb-06	<b>Revised</b> 3/22/2004
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<b>Cumulative MWH's</b>		<b>TOTAL</b>	<b>LEU</b>
<b>Start:</b> 60,428.70	<b>End:</b> 60,479.51	10,781.50	

\*added HEU = 49698.01

Run No.	Day (1-31)	Ave Pwr Level (MW)	System On Time (hhmm)	Start Time (hhmm)	S/D Time (hhmm)	Operating Time (hrs)	Todays total MWH	Stack Monitor max CPM	Ar-41 Released	
									Limit = 4E-4 uCi/cc	
									uCi/cc	CI/day
7961	1	2.00	0900	0945	1010	0.42	0.83	4,000	1.22E-05	0.12
7962	2	2.00	0900	1019	1230	2.18	4.37	4,000	1.22E-05	0.61
7963	7	2.00	0840	0936	1148	2.20	4.40	4,000	1.22E-05	0.62
7964	7	0.10	1422	1513	1728	2.25	0.23	300	9.12E-07	0.03
7965	8	0.10	0840	0953	1107	1.23	0.12	300	9.12E-07	0.02
7966	9	2.00	0830	0920	1033	1.22	2.43	4,000	1.22E-05	0.34
7967	10	2.00	0830	0940	1640	7.00	14.00	4,000	1.22E-05	1.96
7968	16	2.00	0835	0920	1233	3.22	6.43	4,000	1.22E-05	0.90
7969	21	2.00	0830	0940	1240	3.00	6.00	3,500	1.06E-05	0.84
7970	23	2.00	0840	0937	1237	3.00	6.00	3,500	1.06E-05	0.84
7971	28	2.00	0830	0932	1232	3.00	6.00	3,500	1.06E-05	0.84
<b>Totals:</b>						28.72	50.82			7.11

**SUMMARY**

<b>Operating</b>	<b>Max.</b>	<b>Actual</b>		<b>Max.</b>	<b>Actual</b>
<b>Hours</b>	140.0	28.7	<b>MWH's:</b>	280.0	50.8
<b>Percentage</b>		21%			18%
<b>Stack Releases</b>	7.1 curies				





ENCLOSURE 1

(Continued)

NSC-78

**Monthly Information Sheet**

NSC-78

<b>Month:</b> May-05	<b>Revised</b> 3/22/2004
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<b>Cumulative MWH's</b>			<b>TOTAL</b>	<b>LEU</b>
<b>Start:</b> 60,555.53	<b>End:</b> 60,594.43		10,887.01	

\*added HEU = 49698.01

Run No.	Day (1-31)	Ave Pwr Level (MW)	System On Time (hhmm)	Start Time (hhmm)	S/D Time (hhmm)	Operating Time (hrs)	Today's total MWH	Stack Monitor max CPM	Ar-41 Released	
									Limit = 4E-4 uCi/cc	
									uCi/cc	Ci/day
7991	4	2.00	0835	0948	1248	3.00	6.00	5,000	2.25E-05	0.84
7992	9	2.00	0840	0938	1238	3.00	6.00	4,000	1.80E-05	0.84
7993	11	2.00	0830	0919	0958	0.65	1.30	4,000	1.80E-05	0.18
7994	18	2.00	0830	0850	1000	1.17	2.33	4,000	1.80E-05	0.33
7995	23	2.00	0830	0930	1712	7.70	15.40	4,000	1.80E-05	2.16
7996	25	2.00	0835	0924	1040	1.27	2.53	5,000	2.25E-05	0.35
7997	26	2.00	0915	0930	1100	1.50	3.00	5,000	2.25E-05	0.42
7998	30	2.00	0830	0920	1030	1.17	2.33	5,000	2.25E-05	0.33
<b>Totals:</b>						19.45	38.90			5.45

**SUMMARY**

<b>Operating</b>	<b>Max.</b>	<b>Actual</b>		<b>Max.</b>	<b>Actual</b>
<b>Hours</b>	147.0	19.5	<b>MWH's:</b>	294.0	38.9
<b>Percentage</b>		13%			13%
<b>Stack Releases</b>	5.4 curies				

ENCLOSURE 1

(Continued)

NSC-78

**Monthly Information Sheet**

NSC-78

<b>Month:</b> Jun-2006	<b>Revised</b> 3/22/2004
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<b>Cumulative MWH's</b>		<b>TOTAL</b>	<b>LEU</b>
<b>Start:</b> 60,594.43	<b>End:</b> 60,646.10	10,938.68	

\*added HEU = 49698.01

Run No.	Day (1-31)	Ave Pwr Level (MW)	System On Time (hhmm)	Start Time (hhmm)	S/D Time (hhmm)	Operating Time (hrs)	Todays total MWH	Stack Monitor max CPM	Ar-41 Released	
									Limit = 4E-4 uCi/cc	
									uCi/cc	CI/day
7999	1	2.00	0830	0933	1015	0.70	1.40	5,000	2.25E-05	0.20
8000	6	2.00	0906	1022	1322	3.00	6.00	6,000	2.69E-05	0.84
8001	8	2.00	0822	0910	1034	1.40	2.80	5,000	2.25E-05	0.39
8002	13	2.00	0830	0920	1125	2.08	4.17	5,000	2.25E-05	0.58
8003	15	2.00	0845	1114	1414	3.00	6.00	3,000	1.35E-05	0.84
8004	20	2.00	0835	0930	1230	3.00	6.00	10,000	4.49E-05	0.84
8005	22	2.00	0830	0930	1230	3.00	6.00	10,000	4.49E-05	0.84
8006	27	2.00	0830	0930	1230	3.00	6.00	6,000	2.69E-05	0.84
8007	29	2.00	0830	0920	1259	3.65	7.30	4,000	1.80E-05	1.02
8008	30	2.00	1000	1120	1420	3.00	6.00	5,000	2.25E-05	0.84
<b>Totals:</b>						25.83	51.67			7.23

**SUMMARY**

Operating	Max.	Actual		Max.	Actual
Hours	147.0	25.8	MWH's:	294.0	51.7
Percentage		18%			18%
Stack Releases	7.2 curies				

ENCLOSURE 2

**EMERGENCY SHUTDOWNS AND SCRAMS**

The following is a listing of the emergency shutdowns and inadvertent scrams that occurred during the 2005-2006 reporting period. This information is required by Technical Specification 6.8.4.b.

<b>DATE</b>	<b>RUN #</b>	<b>LOGBOOK / PAGE</b>	<b>CAUSE</b>
7/26/05	7890	53 / 94	High N Flux Scram due to incore location. Also dropped Blade #2.
8/1/05	7891	53 / 95	Dropped Blade #3 due to magnet misalignment.
8/2/05	7892	53 / 96	High N Flux Scram due to incore location.
8/11/05	7896	53 / 101	Dropped Blade #1 due to magnet misalignment.
8/16/05	7899	53 / 105	Reactor scram when Wide Range Monitor #1 ranged down during start-up.
8/18/05	7901	53 / 107	High N Flux Scram due to incore location.
8/19/05	7902	53 / 109	Dropped Blade #2 due to magnet misalignment.
9/1/05	7906	53 / 113	Dropped Blade #3 due to magnet misalignment.
9/22/05	7913	53 / 120	Dropped Blade #3 due to magnet misalignment.
9/27/05	7914	53 / 121	Dropped Blade #2 due to magnet misalignment.
10/3/05	7916	53 / 123	Reactor scram while manipulating the data acquisition system instrumentation wires.
10/7/05	7920	53 / 127	High Temperature scram while manipulating the High Temperature instrumentation wires.
10/12/05	7922	53 / 129	Dropped Blade #2 due to magnet misalignment.
10/14/05	7924	53 / 131	Dropped Blade #3 due to magnet misalignment.
10/18/05	7926	53 / 133	Dropped Blade #2 due to magnet misalignment.
10/19/05	7927	53 / 134	Dropped Blade #3 due to magnet misalignment.
12/9/05	7943	54 / 2	Dropped Blades #3 and #4 due to building electrical supply fluctuation.
1/23/06	7957	54 / 13	Reactor scram when Wide Range Monitor #1 ranged down during start-up.
4/3/06	7982	54 / 40	Dropped Blade #3 due to magnet misalignment.
6/6/06	8000	54 / 59	Dropped Blade #3 due to magnet misalignment.
6/15/06	8003	54 / 63	High N Flux Scram due to incore location.

## ENCLOSURE 2

### **EMERGENCY SHUTDOWNS AND SCRAMS**

Most of the unplanned shutdowns occurred because a shim safety blade magnet failed to hold on to the associated blade. There are two factors that contribute to this problem. First, the alignment between the magnet and the armature must be manually set prior to engaging magnet current. If this alignment is not set well, then the armature will rub against the magnet shroud when the blade is withdrawn. This can cause the armature to get knocked loose from the magnet as the blade is being withdrawn. The second contributing factor is that sometimes the magnet current wires get caught in between the armature and the shroud as the magnet is raised and the wires slacken. This can also cause the armature to get pushed off of the magnet. In response to the problem, the magnet current wires have been tied off so that they will not fall into the shroud when the tension slackens. The result has been that since 10/18/05 the only blade that has been dropped is Blade #3, which has the worst alignment of the four shim safeties.



ENCLOSURE 3

The following is a listing of the major maintenance operations performed in the 2005-2006 reporting period which includes impact upon the safe operation of the reactor and the reasons for corrective maintenance. This information is required by Technical Specification 6.8.4.c.

There were no major maintenance operations which impact the safe operation of the reactor in the 2005-2006 reporting period.

ENCLOSURE 4

**FACILITY CHANGES - 10CFR50.59 REVIEW**

The following is a listing and description of 10CFR50.59 evaluations conducted during the 2005-2006 reporting period. This information is required by Technical Specification 6.8.4.d.

1. **Repair of the Reactor Control Annunciator Panel**

Pursuant to 10CFR50.59, a committee was formed to evaluate the repair of the Reactor Control Annunciator Panel. A power surge caused damage to the panel. After repair, all alarms, scrams, and interlocks were verified to be functioning.

2. **Neutron Flux Monitor Non-Operate Indicator Light**

Pursuant to 10CFR50.59, a committee was formed to evaluate the fact that the Non-Operate indicator light on one of the Neutron Flux Monitors is illuminated under operating conditions. It is designed to illuminate when HV is greater than 905V or less than 660V, or when the +15V or -15V supply is degraded. The Low HV Trip set point is set so that it will trip when HV drops to 830V. The HV, +15V, and -15V supplies were verified to be within the expected ranges. All scrams and interlocks associated with the instrument were verified to be functioning properly. The control console annunciator alarm that is associated with this trip functions properly. Consequently, the committee determined that operation could continue despite the indication.

ENCLOSURE 5

**RADIOLOGICAL CONTROLS**

1. Environmental Surveys Outside the Facility - Technical Specification 6.8.4.e

Quarterly OSL<sup>1</sup> badges are deployed outside the reactor building in three separate locations. The general public does not frequent these locations and therefore occupancy factors may be used to approximate annual dose. The allowable external dose rates must be below 50 mrem per year. The quarterly doses in units of mrem are shown in the table below.

LOCATION	3 <sup>RD</sup> QTR 2005	4 <sup>TH</sup> QTR 2005	1 <sup>ST</sup> QTR 2006	2 <sup>ND</sup> QTR 2006 <sup>2</sup>
Northeast Wall	1	23	23	1
Demineralizer Door	130	272	97	84
Heat Exchanger Door	15	39	22	1

These areas are in locations where access is limited. Consequently, the general public will not frequent these areas, and appropriate occupancy factors can be used to approximate annual dose. Assuming that the maximum time that a member of the general public would be present in one of these locations is 15 minutes per day, an occupancy factor of 0.01 can be used to obtain the annual dose that would be received by a member of the general public, in any of these areas.

The dose rate in the Northeast Wall area is due to storage of RAM, and is present regardless of reactor operation. Applying the occupancy factor, the annual dose to an individual in this area would be 0.48 mrem over the course of last year. The annual dose rate at the Demineralizer and Heat Exchanger Doors is dependent on the operations schedule of the reactor. Ignoring the fact that the dose rate is not present 24 hours per day, and applying the occupancy factor of 0.01, the annual dose that would be received by an individual at the Demineralizer Door would be 5.83 mrem. Likewise the dose received at the Heat Exchanger Door would be 0.77 mrem. The variations from quarter to quarter and from previous reports were due in part to movements of items necessitated by painting and floor repair projects completed during the fiscal year.

2. Annual Exposures Exceeding 500 mrem - Technical Specification 6.8.4.f

There were no personnel exposures greater than 500 mrem.

3. Radioactive Effluents - Technical Specification 6.8.4.g

A. Gaseous effluent concentrations are documented on the Monthly Information Sheets (Form NSC-78) enclosed. The gaseous effluents, primarily Argon-41, were less than 5% of the 10 CFR 20, Appendix B, Table 2, Column 1 effluent limits.

B. Liquid effluent concentrations released to the sewer are documented on the Sewer Disposal Record (Form NSC-52) and/or the Liquid Release Record (Form NSC-17). No liquids were discharged during the reporting period.

<sup>1</sup> Optically Stimulated Luminescence

<sup>2</sup> Landauer reads the OSL dosimeters to 1 mrem.