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L-2010-030
10 CFR 50.36

U.S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, D. C. 20555-0001

Re: Turkey Point Units 3 and 4
Docket Nos. 50-250 and 50-251
2009 Annual Report of Reactor Coolant Specific Activity Limits

The 2009 Turkey Point Units 3 and 4 Annual Reactor Coolant System (RCS) Specific Activity Report is submitted herein pursuant to Turkey Point Technical Specification (TS) 6.9.1.2.

For Turkey Point Unit 4: The reactor coolant specific activity limits of less than or equal to 1.0 microcurie per gram Dose Equivalent I-131 and less than or equal to 100/E-bar microcuries per gram of gross radioactivity defined by Technical Specification 3.4.8.a and 3.4.8.b respectively, were not exceeded for Turkey Point Unit 4 during 2009.

For Turkey Point Unit 3: The reactor coolant specific activity limit of less than or equal to 1.0 microcurie per gram Dose Equivalent I-131 was exceeded on March 16, 2009 at 0145. The reactor coolant specific activity limit of less than or equal to 100/E-bar microcuries per gram of gross radioactivity was not exceeded during 2009. Per TS 6.9.1.2 reporting requirements, Attachment 1 includes the following information for exceeding TS 3.4.8.a limit of 1.0 microcurie per gram Dose Equivalent I-131:

- (1) Reactor power history starting 48 hours prior to the first sample in which the limit was exceeded (in graphic and tabular format);
- (2) Fuel burnup by core region;
- (3) Clean-up flow history starting 48 hours prior to the first sample in which the limit was exceeded;
- (4) History of degassing operations, if any, starting 48 hours prior to the first sample in which the limit was exceeded; and
- (5) The time duration when the specific activity of the primary coolant exceeded 1.0 microcurie per gram Dose Equivalent I-131.

Should there be any questions regarding this information, please contact Robert J. Tomonto, Licensing Manager, at (305) 246-7327.

Sincerely,

Michael Kiley
Vice President
Turkey Point Nuclear Plant

SM

cc: Regional Administrator, Region II, USNRC
Senior Resident Inspector, USNRC, Turkey Point Plant

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NRK

**L-2010-030
Attachment 1**

**Turkey Point Unit 3
2009 Annual Report
RCS Specific Activity**

**TURKEY POINT UNIT 3
2009 ANNUAL SUMMARY REPORT FOR TS 6.9.1.2 REQUIREMENTS
PRIMARY COOLANT SPECIFIC ACTIVITY ANALYSES RESULTS**

Turkey Point Unit 3 Technical Specification (TS) 6.9.1.2 Requirements	Primary Coolant Specific Activity Analyses Results
1. Reactor power history starting 48 hours prior to the first sample in which the limit was exceeded (in graphic and tabular format)	During operating Cycle 23, Turkey Point Unit 3 experienced a fuel defect. During the subsequent refueling outage, in March 2009, the defect was located and removed from the core. During shutdown, the RCS Dose Equivalent Iodine (DEQ) limit specified in TS 3.4.8.a was exceeded. Table 1 provides the reactor power history and the reactor coolant system purification flow rates, on 30 minute intervals, starting 48 hours prior to exceeding the TS limit. The graphic format is also provided in Figure 1.
2. Fuel Burnup by Core Region	The fuel burnup by core region is provided in Figure 2. Note that, by design, the Turkey Point Unit 3 core design is rotationally symmetrical.
3. Clean-Up flow history starting 48 hours prior to the first sample in which the limit was exceeded.	The clean-up flow history starting 48 hours prior to the first sample in which the limit was exceeded is also provided in Table 1, as well as in Figure 1.
4. History of degassing operations, if any, starting 48 hours prior to the first sample in which the limit was exceeded.	The pressurizer steam space degassing is performed by aligning the pressurizer steam space sample line to the Volume Control Tank (VCT) in accordance with station procedures. VCT degassing is accomplished by venting the VCT gas space to the waste gas system. Degassing operations were in progress at the time that the TS limit was exceeded. Specifically, the pressurizer steam space degassing commenced on 3/12/09 at 00:23 in preparation for the refueling outage. VCT venting was performed on 3/15/09 at approximately 16:00, and again multiple times on 3/16/09 to support reactor coolant system degassing operations.

**TURKEY POINT UNIT 3
2009 ANNUAL SUMMARY REPORT FOR TS 6.9.1.2 REQUIREMENTS
PRIMARY COOLANT SPECIFIC ACTIVITY ANALYSES RESULTS**

Turkey Point Unit 3 Technical Specification (TS) 6.9.1.2 Requirements	Primary Coolant Specific Activity Analyses Results
<p>5. The time duration when the specific activity of the primary coolant exceeded 1.0 microcurie per gram DOSE EQUIVALENT I-131</p>	<p>As indicated in Table 2, the TS 3.4.8.a limit of less than or equal to 1.0 microcurie per gram Dose Equivalent (DEQ) I-131 was exceeded on 3/16/09 at 01:45, and cleaned up to below the TS limit of ≤ 1.0 microcurie per gram on 3/16/09 at 0400, with a confirmation sample on 3/16/09 at 0740. The time duration when the specific activity of the primary coolant exceeded the TS limit was 2 hour and 15 minutes. The maximum observed value of 1.09 DEQ I-131 was observed in a sample taken approximately 1 hour and 45 minutes after (the reactor was tripped manually at) the start of the Turkey Point Unit 3 Refueling Outage.</p>

TABLE 1
Turkey Point Unit 3
History of Reactor Power and Clean-up Flow

Date & Time	Reactor Power (%)	Clean-up Flow History (gpm)
3/13/09 21:45	100	108
3/13/09 22:15	100	108
3/13/09 22:45	100	107
3/13/09 23:15	100	108
3/13/09 23:45	100	108
3/14/09 00:15	100	108
3/14/09 00:45	100	108
3/14/09 01:15	100	108
3/14/09 01:45	100	107
3/14/09 02:15	100	108
3/14/09 02:45	100	108
3/14/09 03:15	100	108
3/14/09 03:45	100	108
3/14/09 04:15	100	108
3/14/09 04:45	100	108
3/14/09 05:15	100	108
3/14/09 05:45	100	108
3/14/09 06:15	100	108
3/14/09 06:45	100	108
3/14/09 07:15	100	108
3/14/09 07:45	100	108
3/14/09 08:15	100	108
3/14/09 08:45	100	108
3/14/09 09:15	100	108
3/14/09 09:45	100	108
3/14/09 10:15	100	108
3/14/09 10:45	100	108
3/14/09 11:15	100	108
3/14/09 11:45	100	108
3/14/09 12:15	100	108
3/14/09 12:45	100	108
3/14/09 13:15	100	108
3/14/09 13:45	100	108
3/14/09 14:15	100	108
3/14/09 14:45	100	108
3/14/09 15:15	100	108
3/14/09 15:45	100	108
3/14/09 16:15	100	108
3/14/09 16:45	100	108
3/14/09 17:15	100	107
3/14/09 17:45	100	107
3/14/09 18:15	100	107

TABLE 1
Turkey Point Unit 3
History of Reactor Power and Clean-up Flow

Date & Time	Reactor Power (%)	Clean-up Flow History (gpm)
3/14/09 18:45	100	107
3/14/09 19:15	100	108
3/14/09 19:45	100	108
3/14/09 20:15	100	108
3/14/09 20:45	100	108
3/14/09 21:15	100	108
3/14/09 21:45	100	108
3/14/09 22:15	100	108
3/14/09 22:45	100	108
3/14/09 23:15	100	108
3/14/09 23:45	100	108
3/15/09 00:15	98	108
3/15/09 00:45	95	107
3/15/09 01:15	90	107
3/15/09 01:45	87	108
3/15/09 02:15	82	108
3/15/09 02:45	77	108
3/15/09 03:15	75	107
3/15/09 03:45	70	108
3/15/09 04:15	66	108
3/15/09 04:45	61	108
3/15/09 05:15	57	108
3/15/09 05:45	53	108
3/15/09 06:15	50	108
3/15/09 06:45	49	108
3/15/09 07:15	49	108
3/15/09 07:45	50	108
3/15/09 08:15	50	108
3/15/09 08:45	50	108
3/15/09 09:15	50	108
3/15/09 09:45	50	107
3/15/09 10:15	50	108
3/15/09 10:45	50	108
3/15/09 11:15	50	108
3/15/09 11:45	50	108
3/15/09 12:15	51	108
3/15/09 12:45	51	108
3/15/09 13:15	51	108
3/15/09 13:45	51	108
3/15/09 14:15	51	108
3/15/09 14:45	51	108
3/15/09 15:15	50	108

TABLE 1
Turkey Point Unit 3
History of Reactor Power and Clean-up Flow

Date & Time	Reactor Power (%)	Clean-up Flow History (gpm)
3/15/09 15:45	50	108
3/15/09 16:15	50	108
3/15/09 16:45	51	108
3/15/09 17:15	50	108
3/15/09 17:45	50	108
3/15/09 18:15	50	108
3/15/09 18:45	50	107
3/15/09 19:15	50	108
3/15/09 19:45	50	108
3/15/09 20:15	48	108
3/15/09 20:45	44	108
3/15/09 21:15	38	108
3/15/09 21:45	34	107
3/15/09 22:15	30	108
3/15/09 22:45	29	107
3/15/09 23:15	24	108
3/15/09 23:45	23	108
3/16/09 00:15	0	108
3/16/09 00:45	0	108
3/16/09 01:15	0	109
3/16/09 01:45	0	108
3/16/09 02:15	0	107

Table 2
Turkey Point Unit 3
Specific Activity of Primary Coolant Exceeded TS Limit 3.4.8 *1.05*
[1 microcurie per gram Dose Equivalent Iodine (I-131)]

Date & Time	DEQ I-131 (Microcurie per gram)
15-Mar-09 04:00:00	6.35E-03
15-Mar-09 08:00:00	1.01E-02
15-Mar-09 12:00:00	1.08E-02
15-Mar-09 16:00:00	1.06E-02
15-Mar-09 20:00:00	1.06E-02
16-Mar-09 00:30:00	7.25E-01
16-Mar-09 01:45:00	1.09E+00
16-Mar-09 04:00:00	1.00E+00
16-Mar-09 07:40:00	6.99E-01
16-Mar-09 11:30:00	5.35E-01
16-Mar-09 15:40:00	4.51E-01
16-Mar-09 20:00:00	3.67E-01
17-Mar-09 00:15:00	2.30E-01
17-Mar-09 02:00:00	1.82E-01
17-Mar-09 04:05:00	1.50E-01
17-Mar-09 08:00:00	1.02E-01
17-Mar-09 12:00:00	8.10E-02

Date & Time
 Technical
 Specification
 3.4.8/limit
 (1 microcurie per
 gram DEQ I-131)
 was exceeded



FIGURE 1

Reactor Power and Clean-up Flow Rate Prior to Turkey Point Unit 3 Iodine (I-131) Spike on 3/16/09



Figure 2
Fuel Burnup by Turkey Point Unit 3 Core Region

16381 MWD/MTU
47 PPM
1.478 CORE F-DELTA-H
1.747 CORE FQ

22B 0.872 0.891 53420 1.018	24E 1.113 1.172 38940 1.356	25A 1.351 1.437 22060 1.696	23A 1.017 1.071 49270 1.237	23B 1.011 1.088 50670 1.256	25D 1.370 1.467 22760 1.738	24C 0.900 1.055 36430 1.233	23D 0.338 0.585 43240 0.714
24E 1.113 1.172 38940 1.356	24E 1.130 1.177 39290 1.364	24C 1.121 1.167 40700 1.352	25D 1.393 1.478 22650 1.747	24A 1.160 1.250 35020 1.452	24D 1.191 1.285 37170 1.511	25B 1.080 1.310 17430 1.554	23A 0.285 0.553 42520 0.672
25A 1.351 1.437 22060 1.696	24C 1.121 1.167 40580 1.352	25A 1.336 1.427 21670 1.681	23B 1.004 1.058 51780 1.213	24E 1.155 1.231 41060 1.436	25D 1.331 1.465 21820 1.737	24C 0.719 0.983 33190 1.146	
23A 1.017 1.071 49270 1.237	25D 1.381 1.475 22590 1.744	23B 1.004 1.058 51800 1.213	24B 1.082 1.134 39350 1.311	25C 1.332 1.459 22100 1.726	25B 1.135 1.388 18560 1.645	23C 0.418 0.775 43960 0.892	
23B 1.011 1.088 50670 1.256	24A 1.160 1.250 35000 1.453	24E 1.155 1.231 41040 1.436	25C 1.332 1.459 22090 1.726	23B 0.835 1.015 43050 1.167	23C 0.461 0.807 44870 0.928		
25D 1.370 1.467 22760 1.738	24D 1.192 1.286 37150 1.513	25D 1.331 1.465 21820 1.737	25B 1.135 1.388 18550 1.645	23C 0.461 0.806 44860 0.926			
24C 0.900 1.055 36430 1.233	25B 1.080 1.310 17450 1.555	24C 0.719 0.984 33180 1.147	23C 0.418 0.774 43940 0.891				
23D 0.338 0.585 43240 0.714	23A 0.286 0.554 42560 0.674						

1A	REGION
AP	ASSEMBLY POWER
MP	MAXIMUM POWER
AB	ASSEMBLY BURNUP
FQ	ASSEMBLY FQ

■ PEAK QUADRANT

REGION IDENT.	NUMBER OF ASSEMBLIES	POWER SHARING	BURNUPS TOTAL	BURNUPS CYCLE	REGION IDENT.	NUMBER OF ASSEMBLIES	POWER SHARING	BURNUPS TOTAL	BURNUPS CYCLE
22B	1	0.872	53420	13940	24C	20	0.916	36820	14870
23A	12	0.529	44780	8260	24D	8	1.191	37160	20270
23B	16	0.963	49320	15710	24E	16	1.138	40080	19170
23C	16	0.439	44410	6610	25A	8	1.344	21860	21860
23D	4	0.338	43240	4890	25B	16	1.108	18000	18000
24A	8	1.160	35010	19620	25C	8	1.332	22090	22090
24B	4	1.082	39350	17960	25D	20	1.359	22330	22330

CYCLE 23 - 16381 MWD/MTU