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SUBJECT: Submits requested addl info re two previously submitted proposed changes to Tech Specs.

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March 3, 1988

U. S. Nuclear Regulatory Commission
Attention: Document Control Desk
Washington, D.C. 20555

Gentlemen:

Subject: Docket Nos. 50-361 and 50-362
San Onofre Nuclear Generating Station
Units 2 and 3

The NRC's letter dated November 4, 1987, requested that SCE provide additional information pertaining to two previously submitted proposed changes to the San Onofre Nuclear Generating Station (SONGS) Units 2 and 3 technical specifications. The two proposed changes, PCN-223 and PCN-225, were submitted by Amendment Application Nos. 36 and 22 for SONGS 2 and 3, respectively, dated May 12, 1987. The requested additional information is provided in Enclosure 1.

Enclosure 2 provides revised attachments for PCN-223 and PCN-225. The revised attachment for PCN-223 reflects issuance of Amendment Nos. 57 and 46 which approved changes to the technical specification pages affected by PCN-223. The revised attachment for PCN-225 incorporates in Note d of Table 4.11.2, two additional conditions from the Standard Technical Specifications which would discontinue sampling and analysis of gaseous effluent activity under certain circumstances. These revised attachments supersede the corresponding attachments previously submitted with PCN-223 and PCN-225.

Should you have any questions regarding the enclosed information, please call me.

Very truly yours,

M. O. Medford

Enclosures

cc: D. Hickman, NRR Senior Project Manager, San Onofre Units 2 and 3
J. B. Martin, Regional Administrator, NRC Region V
F. R. Huey, NRC Senior Resident Inspector, San Onofre Units 1, 2 and 3

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Response to NRC Questions on PCNs 223 and 225

Question 1 (PCN 223)

Proposed Change NPF-10/15-223 involves amending the Technical Specifications (TS) for San Onofre Units 2 and 3 to allow a decrease in the frequency of monitoring radioactive liquid effluents for the following lines: steam generator blowdown; steam generator blowdown bypass; and turbine building sumps. In particular, SCE has proposed to modify "ACTION 29" in TS Tables 3.3-12 (on pages 3/4 3-65 and 3/4 3-66 for Units 2 and 3, respectively) such that grab samples would be collected every 12 hours, instead of every 8 hours, and analyzed within 24 hours, instead of within 8 hours, if the specific activity of the secondary coolant is greater than 0.01 microcuries/gram dose equivalent I-131. The Standard Technical Specifications state that grab samples shall be collected and analyzed every 12 hours, if the specific activity of the secondary coolant is greater than 0.01 microcuries/gram dose equivalent I-131. Since activities in the secondary coolant greater than 0.01 microcuries/gram dose equivalent I-131 are relatively high, provide a plant specific justification for this deviation from the Standard Technical Specifications.

Response:

The proposed change to modify "ACTION 29" in Table 3.3-12 is consistent with the intent of the Standard Technical Specifications. Perhaps it is more expedient to illustrate the concept of the collection and analysis frequency of grab samples addressed in the proposed change and the Standard Technical Specifications with an example.

Suppose that the first grab sample can be taken immediately after the specific activity of the secondary coolant is found greater than 0.01 microcuries/gram dose equivalent I-131, say, at 8 o'clock sharp in the morning on Day 1. The Standard Technical Specifications state that this particular grab sample can be analyzed anytime prior to 8 o'clock sharp in the evening on Day 1. For the sake of discussion, let us assume that the grab sample is analyzed exactly 12 hours later at 8 o'clock sharp in the evening on Day 1. At this particular moment, the second grab sample must be collected to meet the requirement of the Standard Technical Specifications. Literally, this grab sample taken at 8 o'clock sharp in the evening on Day 1 can be analyzed later at 8 o'clock sharp in the morning on Day 2 without any violation to the Standard Technical Specifications. This particular pattern of collection and analysis of grab samples every 12 hours will then be repeated again so long as the specific activity of the secondary coolant is greater than 0.01 microcuries/gram dose equivalent I-131. As a result, there will be an equilibrium pattern shown in Figure 1 at page 4 of this enclosure.

Once the equilibrium pattern is developed, each grab sample will be collected within 12 hours with respect to the previous one and analyzed within the following 12 hours without any violation to the Standard Technical Specifications. Alternatively, it can be said that each grab sample will be

collected within 12 hours and analyzed within 24 hours of its collection with respect to a common reference point which is the onset of a 0.01 microcuries/gram dose equivalent I-131 specific activity. For example, Sample 2 is collected within 12 hours and analyzed within 24 hours of its collection with respect to Sample 1. This is the position addressed in PCN 223.

The illustration shown in Figure 1 is based on the assumption that the first grab sample (Sample 1) is collected at the onset of a 0.01 microcuries/gram dose equivalent I-131 specific activity. If Sample 1 were to be collected at 12:00 noon on Day 1 and analyzed at 12:00 midnight on Day 1, would this practice be considered as a deviation from the Standard Technical Specifications? One may argue that it is a deviation because the grab sample is not analyzed within 12 hours from the onset of this specific activity. However, this argument is based on the presumption that the exact timing of the specific activity of the secondary coolant being greater than 0.01 microcuries/gram dose equivalent I-131 can be determined. In practice, the specific activity of the secondary coolant is determined pursuant to Technical Specification 3/4.7.1.4 on a 72 hour basis. Suppose the onset of this specific activity actually starts at 8:00 a.m. on Day 1, but it is identified four hours later at 12:00 noon at the end of a 72 hour period pursuant to Technical Specification 3/4.7.1.4. A grab sample is taken immediately thereafter and analyzed 12 hours later at midnight. This practice is acceptable in view of the Standard Technical Specifications even though there is a 16 hour delay in the analysis of the subject grab sample.

The two examples discussed above are based on exactly identical conditions. A divergent conclusion may result depending on the interpretation of the Standard Technical Specifications. This dilemma is attributable to the fact that a reference point, i.e., the onset of a specific activity greater than 0.01 microcuries/gram dose equivalent of I-131, cannot be ascertained in practice. SCE believes that the Standard Technical Specifications not be interpreted in a very narrow sense as far as Sample 1 is concerned. Theoretically, Sample 1 may be collected 72 hours after the onset of a specific activity of 0.01 microcuries/gram dose equivalent I-131 in view of Technical Specification 3/4.7.1.4. Thus, it can be concluded that there is no deviation from the intent of the Standard Technical Specifications even if Sample 1 is collected at 8:00 p.m. on Day 1 after the discovery of a specific activity of 0.01 microcuries/gram dose equivalent I-131 at 8:00 a.m. on Day 1. Of course, it is only a hypothetical case for illustration which SCE will not endorse in practice. It is obvious that a possible delay of 12 hours in collecting a grab sample and analyzing it within the following 12 hours will not have a more severe consequence than taking a grab sample at the end of a 72 hour period and analyzing it immediately thereafter. The former represents a hypothetical delay of 24 hours in analyzing Sample 1 even though it is collected within the allowable time limit specified by the Standard Technical Specifications. The latter shows a possible time lapse of 72 hours in performing the required analysis even though there is no deviation to the Standard Technical Specification requirements for sampling and analyzing Sample 1.

The critical issue involved here is whether the onset of a specific activity greater than 0.01 microcuries/gram dose equivalent I-131 can be identified in a timely fashion to initiate a collection and analysis process for the first grab sample. Without any attempt to address this critical issue on timing, SCE believes that the proposed change for ACTION 29 is in conformity with the Standard Technical Specification requirements. In fact, the proposed change is consistent with other effluent monitoring action statements such as ACTION 37 for gaseous effluents found in Technical Specification 3/4.3.3.9. Since the sampling requirements addressed by Technical Specification 3/4.3.3.8 are compensatory in nature and are not incorporated in any postulated accident analysis, the proposed change to relax sampling frequencies would not affect the consequences of any previously analyzed accident. In addition, all liquid effluent monitors affected by ACTION 29 do not provide radiation level indication and alarm annunciation other than a means for collection and analysis of required routine samples for documentation purposes only. No safety margin reduction will result from a revision to ACTION 29. The proposed change would mean a substantial relief to perform the required analysis and to minimize potential, unnecessary exposures to plant personnel. It is a practical approach chosen by SCE to accomplish the intent of the Standard Technical Specifications.

In conclusion, SCE believes that the proposed change to modify ACTION 29 in Table 3.3-12 is reasonable and consistent with the intent of the Standard Technical Specifications in the absence of a specific guidance to determine a reference point for initiation of a collection and analysis process. If the wording of ACTION 29 in the proposed change does not clearly manifest this particular intent, it may be revised to read in part that "grab samples would be collected once per 12 (or 24) hours and analyzed within the following 12 (or 24) hours of the collection when the specific activity of the secondary coolant is greater than (or less than or equal to) 0.01 microcuries/gram DOSE EQUIVALENT I-131." Additionally, there are revisions pertinent to pages 3/4 3-65 and 3/4 3-66 for SONGS Units 2 and 3, respectively, which reflect an update of the Technical Specification changes previously approved by the NRC per Amendment Nos. 57 and 46 on December 12, 1986. The replacement pages incorporating these revisions and proposed new changes in wording are provided herewith in Enclosure 2.

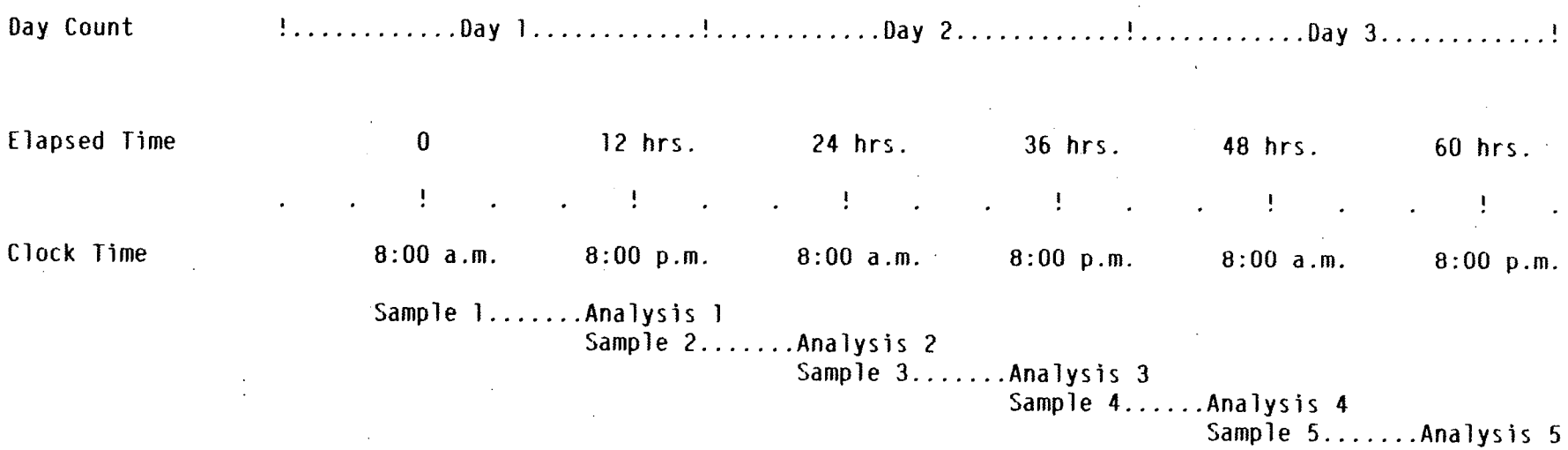

Figure 1 - Sample Collection and Analysis Pattern

Question 2 (PCN 225)

Proposed Change NPF-10/15-22-225 involves amending TS Table 4.11-2 to allow a decrease in the frequency of sampling and analyzing radioactive gaseous effluents following each shutdown, startup or thermal power change exceeding 15% of rated thermal power in one hour. The Standard Technical Specifications state that:

> "Samples shall be changed at least once per 7 days and analyses shall be completed within 48 hours after changing, or after removal from sampler. Sampling shall also be performed at least once per 24 hours for at least 7 days following each shutdown, startup, or THERMAL POWER change exceeding 15% of RATED THERMAL POWER within a 1-hour period and analyses shall be completed within 48 hours of changing. When samples collected for 24 hours are analyzed, the corresponding LLDs may be increased by a factor of 10. This requirement does not apply if: (1) analysis shows that the DOSE EQUIVALENT I-131 concentration in the reactor coolant has not increased more than a factor of 3; and (2) the noble gas monitor shows that effluent activity has not increased more than a factor of 3."

In contrast, SCE proposes to sample at least once between 28 to 36 hours for the preceding situations. SCE states that:

> "Since radioiodines and principal gamma emitters tend to peak out within the first 36 hours in each situation, any sampling taken during this time period will provide a better indication of the peak concentration of those radioactive materials presented in gaseous effluents. Thus, it is not necessary to sample every 24 hours for at least 7 days as required by the existing Technical Specification to determine the peak dose rate."

a. Provide the data and analysis that indicate that radioiodines and the principal gamma emitters tend to peak out within the first 36 hours for the preceding situations. The analysis should consider not only the types of fuel(s) that SCE has historically used but also fuels that SCE expects to use in the future, and any unusual operating conditions.

b. Provide additional information that will assure that the decreased frequency in sampling and analyzing the gaseous radioactive effluents will not diminish the plants capability to remain within the dose design objectives of Appendix I of 10 CFR 50.

Response:

SCE had conducted a survey to determine the characteristics of iodine spikes which occurred in SONGS Unit 3 during Cycle 1 and SONGS Unit 2 during Cycle 3 in support of the proposed Technical Specification change (PCN-225). Nine different SONGS Unit 3 transients occurring during 1984 and 1985 were examined. These transients include a variety of trips, shutdowns and power

ramp-downs or combinations thereof. Additionally, seven SONGS Unit 2 transients pertinent to reactor trips and shutdowns during 1986 and 1987 were examined. Table 1 summarizes the timing of pronounced iodine spikes, as identified from the reactor coolant activity analysis, after each transient.

As can be seen in Table 1 at page 8, the levels of the dose equivalent I-131 activity may peak as early as 2 to 4 hours and as late as 10 to 14 hours after initiation of the transients. The total activity including radioiodines and principal gamma emitters will follow the same pattern as the iodine spikes. A sample example of these post-transient data is shown in Table 2 at page 9. It is fair to say that radioiodines and principal gamma emitters tend to peak out within 2 to 19 hours after the transient. After each peak, the specific activity will then decrease steadily until it approaches the previous steady state values within a day or two. As a result, it is expected that post-transient activity trends in gaseous effluents will be similar to those in the reactor coolant with a possible delay of 24 hours in the peak activity in reference to the time-wise behavior of these iodine spikes. Therefore, it seems reasonable to assume that a single set of gaseous effluent samples, taken within 28 to 36 hours after initiation of a transient, would yield activity values indicative of the maximums existing after the transient. Any subsequent sampling efforts on a daily basis for the following 7 days will not provide any new information pertinent to the monitored transient. This conclusion is supported by the corresponding transient data collected by the charcoal and particulate samplers on a continuous basis shown in Table 3 at page 11. These post-transient activity data in gaseous effluents show that the peak level is found either in the first sample taken within a 24-hour period or in the second sample taken within 24-48 hours.

The post-transient data showing the timing of iodine spikes in Table 1 are typical for SONGS Units 2 and 3. No significant iodine spikes could be identified for SONGS Unit 2 until the end of the Cycle 3 operation from July, 1986 to August, 1987. Likewise, no significant iodine spikes were observed for SONGS Unit 3 after its Cycle 1 operation. It is believed that these radioiodine characteristics will remain unchanged for both units since there is no plan to apply a different fuel design in the future. Although the enrichment in each new fuel batch will be increased to accommodate a 24-month cycle starting Cycle 4, it is anticipated that the transient behavior of the reactor coolant activity will exhibit a similar time history even though the magnitude of iodine spikes may be different due to an increased inventory of fission products.

The post-transient data for gaseous effluents show that effluent activity will not increase more than a factor of 10 under most circumstances. Additionally, these post-transient data will be taken continuously and the integrated dose will be measured. A reduction in the sampling and frequency will not affect the measurement of the overall integrated dose attributable to radioiodines and principal gamma emitters, after shutdowns, startups or thermal power changes exceeding 15% of rated thermal power. The charcoal and particulate

samplers will remain in operation to entrap all radioiodines and radioactive materials in particulate form in gaseous effluents from all pathways of exposure. These radioiodines and radioactive materials in particulate form would not be released to the atmosphere intermittently because of the proposed Technical Specification change. Hence, the reduction in the sampling and analysis frequency will not impose any adverse impact on the plant's capability to remain within the dose design objectives of Appendix I of 10 CFR 50.

In conclusion, the proposed sampling and analysis frequency for gaseous effluent samples once within 28-36 hours can be supported by empirical data. There is no benefit to complying with the mandate of collecting gaseous effluents "at least once per 24 hours for at least 7 days following each shutdown, startup or THERMAL POWER change exceeding 15% of RATED THERMAL POWER within a 1-hour period" and analyzing them "within 48 hours of changing." The proposed change would provide a substantial relief to perform the required analyses mandated by the existing Technical Specification. This relief will not only minimize unnecessary exposures to plant personnel but also minimize down time of the charcoal and particulate samplers due to a reduction of frequent interruptions under the existing Technical Specification requirements. Finally, the dose design objectives of Appendix I of 10 CFR 50 will not be violated under the proposed Technical Specification change, since there are no inadvertent releases of radioiodines and radioactive materials in gaseous effluents to the atmosphere. All radioiodines and radioactive materials in particulate form would be retained by the charcoal and particulate samplers without compromising the estimated dose commitment even though their sampling and analysis frequency would be reduced.

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Table 1 -- Representative Iodine Spikes for SONGS Units 2 and 3

A. SONGS Unit 2 During 1986 to 1987 (Cycle 3)

Date	Type of Power Transient	Transient Initiation Time	Estimated Peak Time (Hrs)
7/7/86	Trip	14:08	3 to 10
8/12/86	Trip	13:30	2 to 11
9/13/86	Trip	09:52	4 to 12
12/10/86	Trip	10:37	2 to 11
2/5/87	Trip	08:00	5 to 13
3/17/87	Shutdown	04:40	5 to 14
8/29/87	Shutdown	02:40	7 to 16

B. SONGS Unit 3 During 1984 to 1985 (Cycle 1)

Date	Type of Power Transient	Transient Initiation Time	Estimated Peak Time (Hrs)
4/27/84	Ramp, 100% to 80%	07:00	11 to 19
6/1/84	Trip	04:17	2 to 9
6/11/84	Trip	18:17	2 to 7
8/23/84	Ramp, 100% to 31%, then trip	10:41	3 to 12
10/27/84	Ramp, 100% to 77%, then shutdown	22:25	6 to 14
1/27/85	Ramp, 97% to 44%, then shutdown	17:42	3 to 12
3/29/85	Trip	21:08	2 to 5
4/27/85	Ramp, 85% to 18%, then shutdown	14:30	2 to 8
9/14/85	Shutdown	10:05	3 to 11

Table 2 -- Sample Examples of Post-Transient Coolant Activity Data

A. Reactor Trip at 10:37 on December 10, 1986 (SONGS Unit 2)

Sample Date	Sample End Time	Time+ Elapsed (Hrs)	Total Activity Iodine and Gamma Emitter (μCi/cc)	I-131 Dose Equivalent Activity (μCi/cc)
12/10/86	08:50:00		1.187×10^{0}	7.0382×10^{-2}
12/10/86	13:00:00	2.5	6.259×10^{0}	1.6587×10^{0}
12/10/86	17:00:00	6.5	$*6.949 \times 10^{0}$	$*1.7718 \times 10^{0}$
12/10/86	21:00:00	10.5	6.159×10^{0}	1.5619×10^{0}
12/11/86	01:00:00	14.5	4.129×10^{0}	1.2638×10^{0}
12/11/86	05:00:00	18.5	3.325×10^{0}	9.3996×10^{-1}

B. Reactor Trip at 08:00 on February 5, 1987 (SONGS Unit 2)

Sample Date	Sample End Time	Time+ Elapsed (Hrs)	Total Activity Iodine and Gamma Emitter (μCi/cc)	I-131 Dose Equivalent Activity (μCi/cc)
2/4/87	08:25:00		1.178×10^{0}	7.5598×10^{-2}
2/5/87	13:00:00	5.0	9.226×10^{0}	2.0447×10^{0}
2/5/87	17:00:00	9.0	$*6.136 \times 10^{0}$	$*2.0676 \times 10^{0}$
2/5/87	21:00:00	13.0	5.115×10^{0}	1.7822×10^{0}
2/6/87	01:00:00	17.0	5.310×10^{0}	1.4032×10^{0}
2/6/87	04:56:00	21.0	4.805×10^{0}	1.0344×10^{0}

C. Reactor Shutdown at 04:40 on March 17, 1987 (SONGS Unit 2)

Sample Date	Sample End Time	Time+ Elapsed (Hrs)	Total Activity Iodine and Gamma Emitter (μCi/cc)	I-131 Dose Equivalent Activity (μCi/cc)
3/16/87	07:47:00		4.294×10^{0}	1.1123×10^{-1}
3/17/87	04:26:00	0	3.386×10^{0}	3.9578×10^{-1}
3/17/87	05:30:00	1.0	7.287×10^{0}	1.4901×10^{0}
3/17/87	09:53:00	5.0	6.906×10^{0}	2.9989×10^{0}
3/17/87	13:55:00	9.5	$*8.535 \times 10^{0}$	$*3.2188 \times 10^{0}$
3/17/87	17:55:00	13.5	7.241×10^{0}	2.5111×10^{0}
3/17/87	21:55:00	17.5	6.092×10^{0}	2.0380×10^{0}
3/18/87	01:55:00	21.5	4.165×10^{0}	1.4370×10^{0}
3/18/87	08:30:00	28.0	4.865×10^{0}	9.7194×10^{-1}

*Peak activity
+Rounded off to the nearest half an hour

Table 2 -- Sample Examples of Post-Transient Coolant Activity Data (Cont'd)

D. Reactor Trip at 04:17 on June 1, 1984 (SONGS Unit 3)

Sample Date	Sample End Time	Time+ Elapsed (Hrs)	Total Activity Iodine and Gamma Emitter (μCi/cc)	I-131 Dose Equivalent Activity (μCi/cc)
6/1/84	06:20:00	2.0	6.509×10^{-1}	1.4856×10^{0}
6/1/84	10:20:00	6.0	$*1.210 \times 10^{1}$	$*1.9928 \times 10^{0}$
6/1/84	13:30:00	9.0	1.029×10^{1}	1.7553×10^{0}

E. Power Ramp Down at 22:25 on October 27, 1984 (SONGS Unit 3)

Sample Date	Sample End Time	Time+ Elapsed (Hrs)	Total Activity Iodine and Gamma Emitter (μCi/cc)	I-131 Dose Equivalent Activity (μCi/cc)
10/28/84	04:30:00	6.0	1.975×10^{1}	6.1529×10^{0}
10/28/84	08:22:00	10.0	$*2.802 \times 10^{1}$	$*7.4278 \times 10^{0}$
10/28/84	12:26:00	14.0	2.208×10^{1}	6.2066×10^{0}

F. Shutdown at 10:05 on September 14, 1985 (SONGS Unit 3)

Sample Date	Sample End Time	Time+ Elapsed (Hrs)	Total Activity Iodine and Gamma Emitter (μCi/cc)	I-131 Dose Equivalent Activity (μCi/cc)
9/14/85	13:03:00	3.0	8.284×10^{0}	2.5632×10^{0}
9/14/85	17:00:00	7.0	$*1.169 \times 10^{1}$	$*2.6646 \times 10^{0}$
9/14/85	21:00:00	11.0	8.547×10^{0}	1.9220×10^{0}

*Peak activity
+Rounded off to the nearest half an hour

Table 3 -- Gaseous Effluent Activity Data for Charcoal and Particulate Samplers

Sample No.	Data Collection Time	Gaseous Effluent Activity (μCi/cc) Charcoal	Particulate
A	04-DEC-86 09:45 to 10-DEC-86 13:10	1.066 E-11	3.573 E-11
	10-DEC-86 13:25 to 11-DEC-86 11:00	*1.497 E-10	*1.934 E-11
	11-DEC-86 11:10 to 12-DEC-86 09:15	1.322 E-10	4.228 E-12
B	29-JAN-87 08:10 to 05-FEB-87 08:50	2.365 E-11	3.239 E-13
	05-FEB-87 08:55 to 06-FEB-87 07:20	*1.478 E-10	*6.503 E-13
	06-FEB-87 07:25 to 07-FEB-87 10:25	3.461 E-11	2.166 E-13
C	16-MAR-87 09:04 to 17-MAR-87 09:25	3.865 E-11	2.956 E-13
	17-MAR-87 09:30 to 18-MAR-87 10:25	7.464 E-11	*4.017 E-13
	18-MAR-87 10:30 to 19-MAR-87 08:59	*1.487 E-10	2.971 E-13
	19-MAR-87 09:00 to 20-MAR-87 07:25	5.587 E-11	2.154 E-13
D	29-MAY-84 14:00 to 01-JUN-84 07:30	6.841 E-11	5.879 E-13
	01-JUN-84 07:40 to 02-JUN-84 11:55	*3.199 E-10	9.140 E-13
	02-JUN-84 18:50 to 03-JUN-84 07:35	9.809 E-11	*1.186 E-12
	03-JUN-84 07:35 to 04-JUN-84 09:30	2.348 E-10	6.573 E-13
E	27-OCT-84 07:45 to 28-OCT-84 08:30	1.804 E-11	2.782 E-13
	28-OCT-84 08:35 to 29-OCT-84 11:00	1.466 E-11	7.115 E-13
	29-OCT-84 11:05 to 30-OCT-84 07:25	*3.275 E-11	*1.458 E-12
	30-OCT-84 07:35 to 30-OCT-87 15:10	6.454 E-12	7.359 E-13

*Peak activity

Table 3 -- Gaseous Effluent Activity Data for Charcoal and Particulate Samplers (Cont'd)

Sample No.	Data Collection Time		Gaseous Effluent Activity (μCi/cc) Charcoal	Particulate
F	11-SEP-85	08:20 to		
	15-SEP-85	10:00	*1.771 E-9	*1.193 E-10
	15-SEP-85	10:05 to		
	16-SEP-85	10:20	1.651 E-9	5.960 E-11
	16-SEP-85	10:30 to		
	17-SEP-85	12:40	9.041 E-10	5.006 E-12

*Peak activity

Enclosure 2

New Revision to Proposed Technical Specification Changes

1. Replacement pages for PCN 223
2. Replacement pages for PCN 225

ATTACHMENT A

UNIT 2 EXISTING SPECIFICATION

TABLE 3.3-12 (Continued)

TABLE NOTATION

ACTION 28 - With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, effluent releases may continue provided that prior to initiating a release:

a. At least two independent samples are analyzed in accordance with Specification 4.11.1.1.3, and

b. At least two technically qualified members of the Facility Staff independently verify the release rate calculations and discharge line valving;

Otherwise, suspend release of radioactive effluents via this pathway.

ACTION 29 - With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, effluent releases via this pathway may continue provided grab samples are analyzed for gross radioactivity (beta or gamma) at a limit of detection of at least 10^{-7} microcuries/gram:

a. At least once per 8 hours when the specific activity of the secondary coolant is greater than 0.01 microcuries/gram DOSE EQUIVALENT I-131;

b. At least once per 24 hours when the specific activity of the secondary coolant is less than or equal to 0.01 microcuries/gram DOSE EQUIVALENT I-131; or

c. Lock closed valve HV-3773 and divert flow to T-064 for processing as liquid radwaste.

ACTION 30 - With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, effluent releases via this pathway may continue provided that, at least once per 8 hours, grab samples are collected and analyzed for gross radioactivity (beta or gamma) at a limit of detection of at least 10^{-7} microcuries/ml or lock closed valve S22U19-MU077 or S22U19-MU078 and divert flow to the radwaste sump for processing as liquid radwaste.

ACTION 31 - With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, effluent releases via this pathway may continue provided the flow rate is estimated at least once per 4 hours during actual releases. Pump curves may be used to estimate flow.

ATTACHMENT B

UNIT 3 EXISTING SPECIFICATION

TABLE 3.3-12 (Continued)

TABLE NOTATION

ACTION 28 - With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, effluent releases may continue provided that prior to initiating a release:

a. At least two independent samples are analyzed in accordance with Specification 4.11.1.1.3, and

b. At least two technically qualified members of the Facility Staff independently verify the release rate calculations and discharge line valving;

Otherwise, suspend release of radioactive effluents via this pathway.

ACTION 29 - With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, effluent releases via this pathway may continue provided grab samples are analyzed for gross radioactivity (beta or gamma) at a limit of detection of at least 10^{-7} microcuries/gram:

a. At least once per 8 hours when the specific activity of the secondary coolant is greater than 0.01 microcuries/gram DOSE EQUIVALENT I-131.

b. At least once per 24 hours when the specific activity of the secondary coolant is less than or equal to 0.01 microcuries/gram DOSE EQUIVALENT I-131; or

c. Lock closed valve HV-3773 and divert flow to T-064 for processing as liquid radwaste.

ACTION 30 - With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, effluent releases via this pathway may continue provided that, at least once per 8 hours, grab samples are collected and analyzed for gross radioactivity (beta or gamma) at a limit of detection of at least 10^{-7} microcuries/ml or lock closed valve S22U19-MU077 or S22U19-MU078 and divert flow to the radwaste sump for processing as liquid radwaste.

ACTION 31 - With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, effluent releases via this pathway may continue provided the flow rate is estimated at least once per 4 hours during actual releases. Pump curves may be used to estimate flow.

ATTACHMENT C

UNIT 2 PROPOSED SPECIFICATION

TABLE 3.3-12 (Continued)

TABLE NOTATION

ACTION 28 - With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, effluent releases may continue provided that prior to initiating a release:

a. At least two independent samples are analyzed in accordance with Specification 4.11.1.1.3, and

b. At least two technically qualified members of the Facility Staff independently verify the release rate calculations and discharge line valving;

Otherwise, suspend release of radioactive effluents via this pathway.

ACTION 29 - With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, effluent releases via this pathway may continue provided grab samples are analyzed for gross radioactivity (beta or gamma) at a limit of detection of at least 10^{-7} microcuries/gram:

a. Collected at least once per 12 hours and analyzed within the following 12 hours of their collection when the specific activity of the secondary coolant is greater than 0.01 microcuries/gram DOSE EQUIVALENT I-131.

b. Collected at least once per 24 hours and analyzed within the following 24 hours of their collection when the specific activity of the secondary coolant is less than or equal to 0.01 microcuries/gram DOSE EQUIVALENT I-131.

c. Lock closed valve HV-3773 and divert flow to T-064 for processing as liquid radwaste.

ACTION 30 - INTENTIONALLY DELETED

ACTION 31 - With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, effluent releases via this pathway may continue provided the flow rate is estimated at least once per 4 hours during actual releases. Pump curves may be used to estimate flow.

ATTACHMENT D

UNIT 3 PROPOSED SPECIFICATION

TABLE 3.3-12 (Continued)

TABLE NOTATION

ACTION 28 - With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, effluent releases may continue provided that prior to initiating a release:

a. At least two independent samples are analyzed in accordance with Specification 4.11.1.1.3, and

b. At least two technically qualified members of the Facility Staff independently verify the release rate calculations and discharge line valving;

Otherwise, suspend release of radioactive effluents via this pathway.

ACTION 29 - With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, effluent releases via this pathway may continue provided grab samples are analyzed for gross radioactivity (beta or gamma) at a limit of detection of at least 10^{-7} microcuries/gram:

a. Collected at least once per 12 hours and analyzed within the following 12 hours of their collection when the specific activity of the secondary coolant is greater than 0.01 microcuries/gram DOSE EQUIVALENT I-131.

b. Collected at least once per 24 hours and analyzed within the following 24 hours of their collection when the specific activity of the secondary coolant is less than or equal to 0.01 microcuries/gram DOSE EQUIVALENT I-131.

c. Lock closed valve HV-3773 and divert flow to T-064 for processing as liquid radwaste.

ACTION 30 - INTENTIONALLY DELETED

ACTION 31 - With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, effluent releases via this pathway may continue provided the flow rate is estimated at least once per 4 hours during actual releases. Pump curves may be used to estimate flow.

ATTACHMENT A

Existing Technical Specifications, Unit 2

TABLE 4.11-2 (Continued)

TABLE NOTATION

b. Analyses shall also be performed following shutdown, startup, or a THERMAL POWER change exceeding 15 percent of the RATED THERMAL POWER within a 1-hour period.

c. Tritium grab samples shall be taken at least once per 24 hours when the refueling canal is flooded.

d. Samples shall be changed at least once per 7 days and analyses shall be completed within 48 hours after changing (or after removal from sampler). Sampling shall also be performed at least once per 24 hours for at least 7 days following each shutdown, startup or THERMAL POWER change exceeding 15 percent of RATED THERMAL POWER in one hour and analyses shall be completed within 48 hours of changing. When samples collected for 24 hours are analyzed, the corresponding LLD's may be increased by a factor of 10.

e. Tritium grab samples shall be taken at least once per 7 days from the ventilation exhaust from the spent fuel pool area, whenever spent fuel is in the spent fuel pool.

f. The ratio of the sample flow rate to the sampled stream flow rate shall be known for the time period covered by each dose or dose rate calculation made in accordance with Specifications 3.11.2.1, 3.11.2.2 and 3.11.2.3.

g. The principal gamma emitters for which the LLD specification applies exclusively are the following radionuclides: Kr-87, Kr-88, Xe-133, Xe-133m, Xe-135, and Xe-138 for gaseous emissions and Mn-54, Fe-59, Co-58, Co-60, Zn-65, Mo-99, Cs-134, Cs-137, Ce-141 and Ce-144 for particulate emissions. This list does not mean that only these nuclides are to be detected and reported. Other peaks which are measureable and identifiable, together with the above nuclides, shall also be identified and reported.

h. Incinerated oil may be discharged at points other than the plant vent stack. Release shall be accounted for based on pre-release grab sample data.

i. Samples for incinerated oil releases shall be collected from representative samples of filtered oil in liquid form.

ATTACHMENT 3

Existing Technical Specifications, Unit 3

TABLE 4.11-2 (Continued)

TABLE NOTATION

b. Analyses shall also be performed following shutdown, startup, or a THERMAL POWER change exceeding 15 percent of the RATED THERMAL POWER within a one hour period.

c. Tritium grab samples shall be taken at least once per 24 hours when the refueling canal is flooded.

d. Samples shall be changed at least once per 7 days and analyses shall be completed within 48 hours after changing (or after removal from sampler). Sampling shall also be performed at least once per 24 hours for at least 7 days following each shutdown, startup or THERMAL POWER change exceeding 15 percent of RATED THERMAL POWER in one hour and analyses shall be completed within 48 hours of changing. When samples collected for 24 hours are analyzed, the corresponding LLD's may be increased by a factor of 10.

e. Tritium grab samples shall be taken at least once per 7 days from the ventilation exhaust from the spent fuel pool area, whenever spent fuel is in the spent fuel pool.

f. The ratio of the sample flow rate to the sampled stream flow rate shall be known for the time period covered by each dose or dose rate calculation made in accordance with Specifications 3.11.2.1, 3.11.2.2 and 3.11.2.3.

g. The principal gamma emitters for which the LLD specification applies exclusively are the following radionuclides: Kr-87, Kr-88, Xe-133, Xe-133m, Xe-135, and Xe-138 for gaseous emissions and Mn-54, Fe-59, Co-58, Co-60, Zn-65, Mo-99, Cs-134, Cs-137, Ce-141 and Ce-144 for particulate emissions. This list does not mean that only these nuclides are to be detected and reported. Other peaks which are measureable and identifiable, together with the above nuclides, shall also be identified and reported.

h. Incinerated oil may be discharged at points other than the plant vent stack. Release shall be accounted for based on pre-release grab sample data.

i. Samples for incinerated oil releases shall be collected from representative samples of filtered oil in liquid form.

ATTACHMENT C

Proposed Technical Specifications, Unit 2

TABLE 4.11-2 (Continued)

TABLE NOTATION

b. Analyses shall also be performed following shutdown, startup, or a THERMAL POWER change exceeding 15 percent of the RATED THERMAL POWER within a one hour period.

c. Tritium grab samples shall be taken at least once per 24 hours when the refueling canal is flooded.

d. Samples shall be changed at least once per 7 days and analyses shall be completed within 48 hours after changing (or after removal from sampler). Sampling shall also be performed at least once between 28 to 36 hours following each shutdown, startup or THERMAL POWER change exceeding 15 percent of RATED THERMAL POWER in one hour and analyses shall be completed within 48 hours of changing. When samples collected for this period are analyzed, the corresponding LLD's may be increased by a factor of 10. This requirement does not apply if: (1) analysis shows that the DOSE EQUIVALENT I-131 concentration in the reactor coolant has not increased more than a factor of 3; and (2) the noble gas monitor shows that effluent activity has not increased more than a factor of 3.

e. Tritium grab samples shall be taken at least once per 7 days from the ventilation exhaust from the spent fuel pool area, whenever spent fuel is in the spent fuel pool.

f. The ratio of the sample flow rate to the sampled stream flow rate shall be known for the time period covered by each dose or dose rate calculation made in accordance with Specifications 3.11.2.1, 3.11.2.2 and 3.11.2.3.

g. The principal gamma emitters for which the LLD specification applies exclusively are the following radionuclides: Kr-87, Kr-88, Xe-133, Xe-133m, Xe-135, and Xe-138 for gaseous emissions and Mn-54, Fe-59, Co-58, Co-60, Zn-65, Mo-99, Cs-134, Cs-137, Ce-141 and Ce-144 for particulate emissions. This list does not mean that only these nuclides are to be detected and reported. Other peaks which are measureable and identifiable, together with the above nuclides, shall also be identified and reported.

h. Incinerated oil may be discharged at points other than the plant vent stack. Release shall be accounted for based on pre-release grab sample data.

i. Samples for incinerated oil releases shall be collected from representative samples of filtered oil in liquid form.

ATTACHMENT D

Proposed Technical Specifications, Unit 3

TABLE 4.11-2 (Continued)

TABLE NOTATION

b. Analyses shall also be performed following shutdown, startup, or a THERMAL POWER change exceeding 15 percent of the RATED THERMAL POWER within a one hour period.

c. Tritium grab samples shall be taken at least once per 24 hours when the refueling canal is flooded.

d. Samples shall be changed at least once per 7 days and analyses shall be completed within 48 hours after changing (or after removal from sampler). Sampling shall also be performed at least once between 28 to 36 hours following each shutdown, startup or THERMAL POWER change exceeding 15 percent of RATED THERMAL POWER in one hour and analyses shall be completed within 48 hours of changing. When samples collected for this period are analyzed, the corresponding LLD's may be increased by a factor of 10. This requirement does not apply if: (1) analysis shows that the DOSE EQUIVALENT I-131 concentration in the reactor coolant has not increased more than a factor of 3; and (2) the noble gas monitor shows that effluent activity has not increased more than a factor of 3.

e. Tritium grab samples shall be taken at least once per 7 days from the ventilation exhaust from the spent fuel pool area, whenever spent fuel is in the spent fuel pool.

f. The ratio of the sample flow rate to the sampled stream flow rate shall be known for the time period covered by each dose or dose rate calculation made in accordance with Specifications 3.11.2.1, 3.11.2.2 and 3.11.2.3.

g. The principal gamma emitters for which the LLD specification applies exclusively are the following radionuclides: Kr-87, Kr-88, Xe-133, Xe-133m, Xe-135, and Xe-138 for gaseous emissions and Mn-54, Fe-59, Co-58, Co-60, Zn-65, Mo-99, Cs-134, Cs-137, Ce-141 and Ce-144 for particulate emissions. This list does not mean that only these nuclides are to be detected and reported. Other peaks which are measureable and identifiable, together with the above nuclides, shall also be identified and reported.

h. Incinerated oil may be discharged at points other than the plant vent stack. Release shall be accounted for based on pre-release grab sample data.

i. Samples for incinerated oil releases shall be collected from representative samples of filtered oil in liquid form.