April 30, 1975

Note to Fred Anderson

AMENDMENT 2 TO TECH SPECS. ANO-1

We are returning, with our concurrence, the ANO-1 Tech Spec change package with the following comments on the SER:

OK 1. There are two page 3's.

OK 2. On page 3 under Evaluation, after "added by the Staff" insert "and agreed to by the Licensee."

OK 3. Page 3, (3). Please explain further the basis for your conclusion that "Deletion of the CFT pressure and level instrumentation from the maintenance aspect of Specifications 3.3.5 does not affect the safety of the system or reactor operations and therefore is acceptable."

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OK 4. Page 3, (6). Identify the document where steam generator tube rupture and loss of load incident were previously analyzed.

OK 5. Is there any discrepancy between your statement on page 4 (6) that the steam line break accident outside containment is more probable than a loss of coolant accident and the statement in the basis of Tech Spec 3.10 referring to the "less probable accident of a steam line break."

OK 6. Page 4, (8), Line 5. Change "eveery" to "every".

Has this been discussed w/ Culp?

Bob Culp

Robert H. Culp
OELD

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ATTACHMENT TO LICENSE AMENDMENT NO. 2

CHANGE NO. 2 TO THE TECHNICAL SPECIFICATIONS

FACILITY OPERATING LICENSE NO. DPR-51

DOCKET NO. 50-313

Delete pages 13, 14, 15, 16, 19, 20, 23, 24, 37, 38, 39, 48, 48e, 48f, 60, 66, 67a, 68, 71, 72, 73, 73a, 74, 75, 76, 83, 84, 100a from the Appendix A Technical Specifications and insert the attached replacement pages 13, 14, 15, 16, 19, 20, 23, 24, 24a, 37, 38, 39, 42a, 48, 48e, 48f, 60, 66, 67a, 68, 71, 72, 73, 73a, 74, 75, 76, 83, 84, 100a. The changed areas on the revised pages are shown by a marginal line.

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Other channels are subject only to "drift" errors induced within the instrumentation itself and, consequently, can tolerate longer intervals between calibrations. Process system instrumentation errors induced by drift can be expected to remain within acceptable tolerances if recalibration is performed at the intervals of each refueling period.

Substantial calibration shifts within a channel (essentially a channel failure) will be revealed during routine checking and testing procedures.

Thus, minimum calibration frequencies for the nuclear flux (power range) channels, and once each refueling period for the process system channels is considered acceptable.

Testing

On-line testing of reactor protective channels is required once every 4 weeks on a rotational or staggered basis. The rotation scheme is designed to reduce the probability of an undetected failure existing within the system and to minimize the likelihood of the same systematic test errors being introduced into each redundant channel.

The rotation schedule for the reactor protective channels is as follows:

Channels A, B, C, D	Before Startup if shutdown greater than 24 hours
Channel A	One Week After Startup
Channel B	Two Weeks After Startup
Channel C	Three Weeks After Startup
Channel D	Four Weeks After Startup

The reactor protective system instrumentation test cycle is continued with one channel's instrumentation tested each week. Upon detection of a failure that prevents trip action, all instrumentation associated with the protective channels will be tested after which the rotational test cycle is started again. If actuation of a safety channel occurs, assurance will be required that actuation was within the limiting safety system setting.

The protective channels coincidence logic and control rod drive trip breakers are trip tested every four weeks. The trip test checks all logic combinations and is to be performed on a rotational basis. The logic and breakers of the four protective channels shall be trip tested prior to startup and their individual channels trip tested on a cyclic basis. Discovery of a failure requires the testing of all channel logic and breakers, after which the trip test cycle is started again.

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The equipment testing and system sampling frequencies specified in Table 4.1-2 and Table 4.1-3 ~~is~~ considered adequate to maintain the status of the equipment and systems to assure safe operation. | 2

REFERENCE

FSAR Section 7.1.2.3.4

clarify the intent of sampling requirements and measurements. Changes 6 and 7 would increase the surveillance requirements by changing the acceptance testing for the personnel hatch and emergency hatch door seals and battery chargers.

EVALUATION

Our evaluation of the changes proposed by the licensee and added by the staff is as follows:

(1) Table 2.3-1 - Our review of the reactor protection system (RPS) modification as given in the safety evaluation appended to our letter dated February 12, 1975, for the shutdown bypass circuitry modification concluded that the modification did not affect any other safety related system, satisfied the requirements of IEEE Std 279-1971 and enhanced safety by replacing an administrative control function with an automatic control function. This change to the technical specification reflects completion of this approved RPS modification and is acceptable.

(2) Section 3.1.4, "Reactor Coolant System Activity" - We performed a reanalysis of the postulated double-ended rupture of a steam generator tube using current analytical models and meteorological parameters as discussed in the bases to the new specifications. This analysis was performed to determine the acceptable specific activity limits for radioiodine in both the reactor coolant system and secondary coolant system. The specific activity limits for the reactor coolant have been defined in terms of mass (grams) rather than volume (milliliter) as previously used to eliminate possible error in defining temperature and pressure associated with the sample volume. The half-life limitation valve was deleted from the specification since this parameter does not change the possible exposure from cloud passage of a given radioisotopic mixture. However, the minimum time for decay enroute from the source to the nearest site boundary for the assumed meteorological conditions should be considered during the sample analysis and is discussed later. A requirement has been added to the specification which specifies the actions to be taken if the specific activity limits are exceeded. Such requirements were not previously included in the specification. The specific activity limit for radioiodine was not previously defined for the reactor coolant. These limits are defined for steady state reactor conditions and do not reflect possible spiking conditions associated with transient reactor conditions. Such conditions are considered later for surveillance requirements. The minimum ratio determined between the radioiodine specific activity for the reactor coolant and the secondary coolant was conservatively assessed on the basis of the maximum allowable leakage rate of 1 gpm between the primary and secondary systems and

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the half-life of I-131 for equilibrium conditions. The actual ratio of radioiodine specific activity in the reactor coolant to the secondary coolant would be expected to be significantly greater than the calculated value of 20 to 1.

(3) Specifications 3.3.5, 3.3.6 and 3.3.7 - The changes delete the CFT pressure and level instrumentation from the list of systems for which provisions have been made for maintenance. The restrictions on this system are delineated in Specification 3.3.3(D). Exceptions to Specification 3.3.6 conditions given in Specification 3.3.7 provide adequate relief for performing necessary maintenance functions on both the CFT instrument channels and on the BWST level instrument channels. Deletion of the CFT pressure and level instrumentation from the maintenance aspect of Specification 3.3.5 does not affect the safety of the system or reactor operations and therefore is acceptable. Continued reactor operation for seven days with inoperable instrument channels in the CFT and BWST systems as given in Specification 3.3.7 is consistent with exceptions permitted for instrument channels in similar systems and therefore is accepetable.

(4) Specification 3.5.1.7 - This added specification delineates the appropriate DHRS isolation valve closure setpoints or the suction line to assure proper operation of the DHRS when required and the the DHRS relief valve setting necessary to protect the system against overpressure. Proper settings for these valves would be verified during the testing and calibration required by Table 4.1-1.

(5) Figure No. 3.5.2-3 - The change in the permissive operating region for power imbalance reduces the allowable operation to be compatible with the protective system maximum allowable setpoints. The change to this figure does not change the allowable reactor operation since the reactor had to be operated within the more restrictive limits established for the reactor protective system. The change is acceptable.

(6) Section 3.10, "Secondary System Activity" - We have reanalyzed the steam generator tube rupture as analyzed to determine reactor and secondary coolant activity limit, a loss of load incident as previously analyzed to determine the secondary system activity limit and a steam line break accident outside containment. Using the secondary coolant activity limit determined from the steam generator tube rupture as presented in the bases for the reactor coolant system activity, Section 3.1.4, the thyroid doses

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resulting from the other two postulated accidents were determined. Since we consider the probability of occurrence for either the steam generator tube rupture or the loss of load incident to be comparable, the acceptable thyroid dose limit for either incident was taken as 1.5 Rem. We consider the occurrence of a steam line break accident outside containment to be more likely than a loss of coolant accident. For this reason, we consider the acceptable thyroid dose limit to be 30 Rem or significantly less than the guideline doses of 10 CFR Part 100.

As stated in the bases for this section of the technical specifications, the resulting thyroid doses using the specified secondary system activity limit of 0.17 μCi/gm of I-131 dose equivalent are approximately 1.5 Rem for the steam generator tube rupture (as stated in the Bases to Specification 3.1.4), 0.6 for the loss of load incident and 28 Rem for the steam line break accident outside containment. All of these doses are less than the above stated dose guidelines for these accidents and indicate that the controlling accident for determining the secondary coolant radioiodine limit is the steam generator tube rupture. An increase in the ratio of radioiodine specific activity for the reactor coolant to the secondary coolant would directly reduce the calculated dose for the two accidents involving only secondary coolant releases. However, an increase in this ratio would not significantly reduce the calculated dose for the steam generator tube rupture which releases both reactor coolant and secondary coolant radioactivity.

(7) Table 4.1-1 (Item 30) and Table 4.1-2 (Item 11) - Note 3 has been changed to reflect the newly established setpoints on the isolation valves of DIRS given in Specification 3.5.1.7 and gives the pressure range within which the test must be performed. The test will verify the correct setpoints for the isolation valves. The same change was made to the test frequency column in Table 4.1-2 for consistency.

(8) Table 4.1-3 - The minimum sampling and analysis frequency and tests have been changed for the reactor coolant samples. The Gross Activity Determination (previously designated as Gross Beta and Gamma Activity) frequency has been reduced from 5 times per week to 3 times per week and at least every third day. This frequency also has been designated for measuring the Chemistry and Boron Concentration in the Reactor Coolant. Experience has shown that such frequencies are adequate to detect changes in coolant chemistry on a timely basis and permits reactor operation over a week-end or holiday without the need for a reactor coolant sample analysis. Gamma Isotopic Analysis frequency has been increased from monthly

to bi-weekly (once every two weeks) and the Radiochemical Analysis for E Determination has been increased from semi-annually to monthly. Both of these changes in frequency is to detect on a timely basis any change in quality of the gross radioactivity contained in the reactor coolant. Experience has shown that such frequencies will detect changes in quality of radioactivity due to additional failed fuel or change in reactor operations. The Gross Radioiodine Determination has been added to detect radioiodine activity levels in the reactor coolant for compliance with Section 3.1.4 requirements. The specified frequency for the analysis is weekly but shall be more frequent if the gross activity increases by a given amount as specified by Note 3. Experience has shown that a weekly frequency with this condition for more frequent analysis is adequate to detect on a timely basis any changes in reactor coolant radioiodine levels.

A determination of dissolved gases concentration in the reactor coolant is required by Specification 3.1.9.1 which places a limit of 100 std cc per liter of water of dissolved gases in the reactor coolant for control rod operation. The buildup of dissolved gases in the reactor coolant is a slow process and therefore weekly determination of this parameter is considered adequate for timely detection of any unusual increases.

The existing requirements for determining tritium concentration, Sr-89 and Sr-90 concentration and gross alpha activity in the reactor coolant are not required because there are no limits necessary for these radioisotopes for operating of the facility. The existing requirement for determining gross beta-gamma activity in the secondary coolant are not required because such activity would not be present and no limits on operation for gross activity are required. Therefore, these requirements have been deleted from the table. Analyses for radioactivity levels and dissolved gases are not required when the plant is in the cold or refueling shutdown condition because these parameters do not affect the safety of the plant when in these shutdown conditions. Thus, Note 7 provides for these exclusions. To determine the level and duration of possible radioactivity spiking for both gross and iodine activity, additional analysis depending upon level of radioactivity during the previous steady state operation at the time of reactor startup and during reactor startup is required by Note 6. This note applies only to the gross determinations of total activity and radioiodine. Note 1 basically remains the same as previously stated for this table except that the increased frequency of analysis is required only until steady state activity level is established. As discussed in Note 1 and Note 2, the gross activity determination

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will be based on the activity present 15 minutes after sampling. This time period is equivalent to the minimum expected decay time from the release point to the nearest site boundary in case of a steam generator tube rupture. Note 2, which is associated with the determination of $\bar{E}$, specifies the method to be used for the determination of $\bar{E}$, the frequency of determination for $\bar{E}$ and radioiodine, and the reference (or equivalent) source to be used to determine the individual gamma and beta energies per disintegration for the radioisotopes present in the reactor coolant. Note 4 to this same sample determination indicates that all radioiodine activities (I-131, 132, 133, 134, and 135) are to be weighted to determine the I-131 dose equivalent activity actually present in the reactor coolant for comparison with the limit established in Specification 3.1.4.1.b. Note 8 states that the O_2 analysis is not required when the plant is in the cold or refueling shutdown condition for the same reason as given for Note 7 acceptability.

Note 9 states that a determination of boron concentration in the Spent Fuel Pool is required only if fuel is present in the pool and prior to fuel being transferred to the pool. Since the boron in pool water is to assure that the fuel remains subcritical, it is not required when there is no fuel in the pool; therefore Note 9 is acceptable. Notes 5 and 10 apply to the secondary coolant sampling and analysis program. Note 5 requires additional sampling and analysis if the primary to secondary leakage increases significantly. Note 10 eliminates the requirement for sampling and analysis of the secondary system coolant when steam generation is not occurring. If steam is not being generated, the postulated accidents, which established the secondary coolant activity limit, could not occur or would not result in any significant release of radioiodine to the environs from the secondary coolant. Note 4 also applies to the secondary coolant radioiodine activity determination for assessing the I-131 dose equivalent activity for comparison with the limit established in Specification 3.10. Note 7 also applies to the secondary coolant sampling and analysis when the plant is in the cold or refueling shutdown condition.

(9) Specification 4.4.1.2.5(b) - To make the testing requirements on the personnel hatch and emergency hatch door seals consistent with Appendix J of 10 CFR Part 50, the first sentence of this specification was modified. The addition of the phrase "when reactor building integrity is required" satisfies Appendix J, 10 CFR 50, requirements provided the existing phrase, "but no more frequently than daily during normal operation" is deleted. The existing requirement for weekly testing during refueling or cold shutdowns

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is not necessary for the proposed specification which limits testing requirements to times when building integrity is required. These changes are acceptable and were made.

(10) Specification 4.6.2.4 - The existing testing requirement relating to the third battery charger has been expanded to apply to all three battery chargers to assure that adequate surveillance of all battery chargers is provided. The additional surveillance requirement is considered appropriate and acceptable to the staff and should increase the reliability of the station battery system.

(11) Appropriate changes in the Bases were made [illegible] clarification, but they do not affect the specifications governing operation of the facility.

CONCLUSION

We have concluded, based on the considerations discussed above, that: (1) because the change does not involve a significant increase in the probability or consequences of accidents previously considered and does not involve a significant decrease in a safety margin, the change does not involve a significant hazards consideration, (2) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, and (3) such activities will be conducted in compliance with the Commission's regulations and the issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public.

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