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PALO VERDE NUCLEAR GENERATING ST[illegible]L, UNITS 1, 2, AND 3

DOCKET NOS. 50-528, 50-529, AND 50-530

REQUEST FOR ADDITIONAL INFORMATION REGARDING

RISK-INFORMED INSERVICE TESTING (RI-IST) PILOT PLANT

The following are the initial questions and comments that have been developed by several NRC staff reviewers who have been reviewing the Palo Verde exemption request. We have attempted to remove redundant questions from the different reviewers and to order the questions generally according to the order of the material presented in the submittal. There may be some redundancy remaining. In the responses to these questions, it is acceptable to refer to other questions for parts of answers or to other documents when appropriate.

I. GENERAL QUESTIONS INCLUDING THOSE RELATED TO THE APS TRANSMITTAL LETTER

G-1
The first ten-year interval of the Palo Verde Unit inservice testing (IST) program was scheduled to expire on January 28, 1996. Apparently, the submittal for the second ten-year interval has been delayed. Please give a status of this effort and provide a proposed implementation schedule. Will this effort proceed concurrent with the proposed exemption request for the Palo Verde IST program or is the second ten-year update dependent on the approval of the exemption request? (see E1-1 and G-4)

G-2
Were any check valves categorized as LSSCs that are currently disassembled and inspected in accordance with the guidance of GL 89-04, Position 2? If so, will there be any proposed changes to the inspection schedule?

G-3
OM-1 establishes different test frequencies for different classes of safety/relief valves. Class 1 valves are tested once every 5 years. Class 2 and 3 valves are tested once every 10 years. It appears that all Class 1 relief valves in Palo Verde's IST program have been classified as MSSCs and Class 2 and 3 valves have been classified as LSSCs. What changes in the test frequency is the licensee proposing for the Class 2 and 3 valves?

G-4
What acceptance criteria are used for the full-stroke open test of the LPSI, HPSI and containment spray pump discharge check valves and the LPSI and containment spray pump suction check valves? If the acceptance criteria are based on achieving a specific flow rate during pump inservice testing, would the acceptance criteria change if the exemption request is implemented? (see G-1)

G-5
Are there any plans to perform any partial-stroke testing of any check valves classified as LSSCs during the deferred testing period? Are other test methods, consistent with OM-22, being considered?

G-6
What is the testing schedule for LSSCs that can only be tested during cold shutdowns or refueling outages? How would you propose these components to be addressed in the deferred test justifications that are evaluated during the 10-year IST program intervals?

G-7
Some licensees have claimed in relief requests that stroke-time testing of solenoid valves provides no information because either the valve strokes or fails and therefore no determination of degradation can be made. It appears that virtually all solenoid valves in the Palo Verde IST program are classified as LSSCs. Are all solenoid valves at Palo Verde exercised as a result of normal plant operations, whether it be at power, cold shutdowns or refueling outages? If the exemption is implemented and testing of solenoid valves differed, would any of these valves be left in the energized position for the entire frequency? Is the licensee considering any more frequent exercising of solenoid valves that are not exercised during their deferred test interval? Please comment.

G-8
The sensitivity studies described in section 4.2.5 do not appear to adequately explore whether components could easily change from one category to another as a function of:

a. failure rates which could be age-dependent,

b. component unavailability assumptions which tend to vary with service condition, and

c. small variations of the decision criteria [i.e., F-V and RAW thresholds].

(see PRA-13 and PRA-15 through 20)

G-9
Staff approval of an exemption from the requirements of 10 CFR 50.55a (f) does not relieve the licensee of its responsibility to comply with technical specifications (TS).

II. QUESTIONS ON ENCLOSURE 1 - EXEMPTION REQUEST

E1-1
The test frequencies referenced in the Enclosure 1 table are based on the 1980 edition of ASME Section XI. The licensee's second ten-year IST interval will be based on OM-1 for relief valves, OM-6 for pumps, and OM-10 for valves other than relief valves. This table should be revised to reflect the applicable code references. (see G-1)

E1-2 (page 2)
Under Item 1, it is stated that two SSC groups were used, the MSSC and the LSSC groups. Later in the submittal (such as in the table on page 11 in Enclosure 3) a 3rd "Medium" grouping for intermediate safety significant SSCs is used. We found this apparent inconsistency confusing although the use of the Medium group was identified later. A broad question during this program is going to be the concerns associated with how to deal with SSCs that are borderline, those that, considering uncertainty, fall so close to whatever cutoff criteria are used, might well belong in either group. See Figure 1 which is a plot of RAW vs. F-V importance (at the end of this question list). This plot is a fairly typical example of the relatively large number of plant components that can fall in the borderline mid-range of the cutoff criteria. This issue is connected with later questions that we have identified about the details of how the Expert Panel carried out its decision process. For this specific area, please provide a more detailed discussion of how the medium group was resolved into the higher or lower safety significant groups. (see PRA-13)

E1-3 (page 2)
Under Item 1, it is stated that all pumps and valves whose function is required for safety will continue to be tested in accordance with the ASME Code. To be consistent with later statements in your proposed program, shouldn't this statement be revised to indicate that improved test methods may be identified for the MSSCs through the ASME O&M Committee work described on page 4 of Enclosure 3 of your submittal? (see E3-2)

E1-4 (page 2)
Under Item 3, it is stated that the RB-IST Program Description may be changed without prior NRC approval provided the changes do not have an adverse impact on plant safety. Please describe what criteria will be used to make that determination. (see E1-7)

E1-5 (page 3)
The next to last paragraph of this page states that one MSSC that was not originally in the IST program and that, although it is outside of the ASME Code class boundary, it is planned to test that component because it has safety significance. It is important that the details concerning such cases be well documented so that an improved understanding can be achieved of this

whole process of using risk information. Accordingly, please provide more detailed information about this component (and any other such components) including the information used to determine its risk significance, the proposed test strategy, and information on its associated Code class boundary, etc. (see E5-1 and E3-26)

E1-6 (page 4)
In the 5th paragraph on this page, it is stated that Item 3 of the exemption request will allow certain changes to be made to the methodology without NRC approval. Please describe the criteria that will be used to distinguish when changes will be approved through the NRC and when they will not. If there is a single set of criteria that applies to the statement made on this page and the similar issue addressed as E1-4 above, a single answer is fine. (see E1-4)

E1-7 (page 4)
Paragraph 6 of this page discusses that changes in IST test frequencies will be provided to the NRC in regular program updates. How frequently are these updates envisioned? (see E2-6)

E1-8 (page 4)
The next to last paragraph of this page discusses the negative aspects of overly extensive testing of components, from component wearout and system unavailability to personnel radiation exposure. We agree that all of these negative aspects exist and wish to develop a better understanding of the potential impact on your plant. Accordingly, please provide a summary of any analyses that you have performed to assess these important factors.

E1-9
The exemption request (page 3 of 5) states that:

> Components in the current ASME Section XI IST Program which are MSSCs will continue to be tested in accordance with the current IST Program, which meets the requirements of Section XI of the ASME Boiler and Pressure Vessel Code, except where specific written relief has been granted.

The licensee should describe its method for determining the test frequencies of both the LSSCs and MSSCs. If the test frequency for the MSSCs was based solely on the Code test frequency, and not through a risk analysis, discuss why this is acceptable.

III. QUESTIONS ON ENCLOSURE 2 - RISK-BASED IST PROGRAM DESCRIPTION

E2-1 (page 1)
In the 1st bullet on this page it is stated that candidate components for extended frequencies were placed in the LSSC category by a blending of probabilistic and deterministic methods. Please describe the criteria used for accomplishing this blending.

E2-2 (page 1)
Section 2 states that testing of an LSSC can be deferred to once every 6 years after two successful tests. Valves would be arranged into groups similar to those described in GL 89-04, Position 2, and tested on a staggered basis. However, for valves that are tested quarterly, a large number of valves would become eligible for deferred testing six months after approval of the exemption request. The NRC will need to review the actual component groupings, the detailed grouping criteria, and sample expansion criteria in order to evaluate the adequacy of this phased-in approach. Also, please describe the implementation schedule to achieve deferred testing on a staggered basis.

E2-3 (page 1)
Section 2 of Enclosure 2 states that "[t]he test frequency of certain LSSCs in the IST Program shall initially be extended to once every 6 years." The test interval for LSSC must be supported by performance data such that the licensee can reasonably expect to find that the component is functional when the inservice test is performed. Therefore, the risk analysis should be supported by performance data for the proposed test interval i.e., the PRA should be supplemented by deterministic methods, such as performance history, to evaluate the acceptability of the proposed test frequency. Furthermore, there should be a performance based feedback mechanism in place to ensure that any adverse or ineffective test strategies are promptly detected and revised.

E2-4 (page 1)
Describe the PVNGS corrective action program that is referenced in Section 2 and exercised in the event that an LSSC fails its inservice test. What criteria would be used to initiate testing of the remaining valves in that group? The corrective action should explicitly include consideration of the need for revising the test frequency. The staff would like to review, during a site visit, any PVNGS procedures or program documents that provide assurance that failures of IST components will be promptly identified and addressed and modifications to the inservice testing program (e.g., changes to the surveillance intervals) are made in a timely manner.

E2-5 (page 2)
Item 4 states that the aggregate impact of multiple changes to test frequencies will be evaluated by one or both of (1) Expert Panel review, and (2) updates to the PRA models and analyses. Please provide the rationale (criteria) to decide when and when not to use both of these approaches. Also describe how the aggregate impact will be evaluated including any "cutoff" criteria beyond which further changes may not be allowed. (see PRA-6)

E2-6 (page 2)
Item 5 on this page states that the need to update the PRA will be evaluated every 18 months. Please expand on why this particular interval is planned for maintaining your living PRA. For example, presumably there will be some criteria that the licensee will use at the end of each 18 months to determine if there has been sufficient and significant changes in the plant systems or in PRA analysis areas that a PRA update would be justified. Please describe such criteria. Also, does the licensee envision that an update would be made sooner in certain instances, e.g., if new data became available that was judged to potentially have a significant impact on the ranking of the SSCs? (see E1-7)

E2-7
If it is to be used, describe how the ASME Code Case OMN-1 may be used in conjunction with the risk-informed IST program.

IV. QUESTIONS ON ENCLOSURE 3 - RISK RANKING DETERMINATION STUDY SUMMARY REPORT

E3-1 (page 3)
Section 1.0 states that there are possible savings from risk based testing including reduced costs for developing test criteria at design basis conditions. Yet, testing MSSCs in this manner is not required by the current Code (but could be a more effective means for detecting important failure modes and causes). Please comment.

E3-2 (page 4)
In the first paragraph on this page it is stated that the ASME O&M Committee is to make recommendations about possible improvements for the MSSCs. The licensee should clarify the relevance of this activity to their exemption request (i.e., does the licensee anticipate incorporating revised ASME Code test strategies into their risk-informed IST program?). Please give us any updated information about the schedule for this activity and how the licensee plans to evaluate the potential value of utilizing this information in its IST program. (see E1-3)

E3-3 (pages 4 and 5)
Starting at the bottom of page 4 under the section titled "Direct Safety Enhancements," the first and last bullets appear to contradict each other as written and may be misleading. Some revised wording is suggested here to clarify the greater attention that will be given to the MSSCs (e.g., the thought that the revised IST program could result in some MSSCs being tested with higher frequencies and others with lower frequencies with the overall intent of enhancing safety). (This comment also applies to discussion in Section 2.1 of Enclosure 4.)

E3-4 (page 6)
In the second bullet on this page, describing the three phases of the IST project, it indicates that component performance was used with risk insights to make decisions about what components should be deferred. Please describe what role component performance played in making such decisions together with risk information.

E3-5 (page 7)
In the second paragraph of this page, it is stated that the methodology described in this document is consistent with the EPRI/NEI PSA Applications Guide generally. Please identify any areas that you consider significant where you deviated from the guidance in the PSA Guide and your reasons for doing so.

E3-6 (page 7)
The second bullet states that sensitivity studies were used to compensate for limitations in the quantitative PRA models. Please describe how each sensitivity study was carried out and the results. (see PRA-15 through PRA-20)

E3-7 (page 7)
The fourth bullet on this page states that IST engineers will review past performance and service conditions of LSSCs to determine if they warrant extended test intervals. Will the Expert Panel review such cases and what criteria will be used by both the IST engineers and the panel (if the panel is involved)?

E3-8 (pages 7 & 8)
At the end of page 7 and top of page 8 it is stated that, while core damage prevention has been found to be a good measure of the spectrum of releases that can result from severe accidents, several components have been identified that do not impact core damage frequency yet they do have a large impact on fission product release potential. Please identify such components. (See also E3-12.)

E3-9 (pages 8 & 9)
Item 3.3 titled "Completeness Issues" starting on page 8 describes what was done to compensate for the limitations in the PRA quantitative risk models. The five bulleted items briefly describe evaluations aimed at: truncation limits, masked components, common cause, operational concerns and sensitivity studies. We believe that these are extremely important issues concerning the adequacy of the PRA models used, and the description is not sufficient for us to understand how each of these issues was evaluated and the results. Please expand this area to more fully explain what was done and what was learned.

E3-10 (page 9)
Item 3.4 on "Cumulative Effects of Test Interval Changes" is, similarly to Item 3.3 (E3-9), too brief for us to fully understand what was done. This is another area that we have been very interested in learning more about its ramifications and possible approaches for avoiding unacceptable risk levels. Please provide an expanded discussion of how this issue was evaluated and what the results were.

E3-11 (page 10)
In Section 3.5, areas of expertise are identified for the Expert Panel. Do one or more of these areas include experience in inservice testing?

E3-12 (page 10)
In Section 3.5.1, the first paragraph discusses the emphasis on using core damage frequency as the primary figure of merit. Please provide a discussion of your views on how to maintain a prudent balance between the emphasized use of CDF and challenges to the containment (defense in depth). (See also E3-8.)

E3-13 (page 11)
The paragraph directly under the table discusses how components were initially categorized. The explanation of this process is not clear. Please provide an example of how this was done (referring to specific components).

E3-14 (page 11)
The explanation under "Qualitative Criteria" is difficult to understand. An example referring to how specific components were treated would help.

E3-15 (page 12)
The table and discussion regarding your requirements for Expert Panel membership show that six categories were defined and that the actual Panel reflected over 106 years of experience. How many Panel members were used in the total and what categories did each come under? (See E3-11)

E3-16 (page 12)
Under Process Considerations, System Level Screening, the approach for using the previous Maintenance Rule ranking and the PRA information is described. Please provide a summary of how the Maintenance Rule ranking was performed or refer to another document for a more detailed explanation. For example, how were cases resolved in which a component did not clearly fall either into the MSSC or LSSC categories and some additional criteria had to be applied?

E3-17 (page 12)
In the last paragraph, under Deterministic Evaluation, the submittal indicated that certain components of high reliability were removed from the MSSC category.

a. What criteria were used to determine when the reliability was sufficiently high to justify removal?

b. Was the determination of a sufficiently high component reliability based on plant-specific data or generic data or a mix?

E3-18 (page 13)
In the second bullet, under Initiating Events, it is stated that an exception to placing a component in the MSSC category was when the probability of failure was considered to be extremely low. Please define what criteria were used to determine this condition.

E3-19 (page 13)
Under External Events, it is stated that all components not screened out during the system level screening were evaluated based on external events information.

What consideration was given to the screened-out components from the effects of external events?

E3-20 (page 13)
Under External Events, what cutoff criteria were used to determine that the frequency of an event was improbable?

E3-21 (page 13)
Under Reconciliation with Quantitative Results, it is stated that components were classified high risk if the initial disposition was high risk but the quantitative results indicated low risk. In such cases, was an attempt made to determine if modifications to the PRA were appropriate to better model component importance?

E3-22 (page 13)
Under Reconciliation..., the Panel's procedures are described when quantitative results were in conflict with the initial disposition and that sensitivity studies were required (where possible). When such studies were not feasible or not possible, what approach was used to resolve such differences?

E3-23 (page 13)
Under Reconciliation..., the process described is difficult to understand. Please provide an example that refers to specific components to show how the process was carried out.

E3-24 (page 14)
Under Item 4.2, the 5th bullet states that both PRA and design basis functions were compared in an integrated manner. Please provide additional explanatory information to clarify what is meant by this. How was this integration carried out?

E3-25 (page 14)
The last sentence states that the proposed IST program is considered by the Expert Panel to have appropriate changes while maintaining an acceptable level of plant safety.

a. Has there been a requantification of the PRA to estimate the overall effect on plant CDF assuming all of the proposed changes are implemented? If so, please summarize the results. If a requantification has not been performed yet, but planned for the future, when would the results be available? For such a requantification, what risk parameters changes would be evaluated and what criteria used to judge an acceptable increase?

b. It is indicated that the PRA model will be updated to include IST components that were so far omitted from the plant's risk model. What is the schedule for submitting the results of this update?

E3-26
What criteria were used to classify check valve AFNV012 as an LSSC? Please indicate why only one valve that was outside of the Palo Verde IST program was classified as an MSSC? Were there LSSCs outside the IST program? If so, please identify them and indicate their testing under the risk-informed program. (see E1-5 and E5-1)

E3-27
It is indicated that risk rankings of plant system components are complemented with rankings based on consideration of "external" accident initiators (e.g., fires, tornados, and earthquakes) and plant operating modes (shutdown). These rankings consider "importances" with respect to core damage prevention and prevention of large early releases (LERF).

It is not clear, however, whether or not:

a. these studies are based on the updated plant model,

b. the LERFs also included the contributions due to external events,

c. the shutdown plant model includes the external events.

Please clarify these areas.

E3-28
The staff would like to review the detailed system notebooks, the human reliability analysis, and the results of all independent IPE review activities during a site visit. (see PRA-1c)

V. QUESTIONS ON ENCLOSURE 4 - RISK RANKING DETERMINATION STUDY

E4-1
Why were check valves SIAV522, SIAV523, SIBV532 and SIBV533 (DWG) categorized as LSSC's even though these valves have a high shutdown risk? Please provide more information regarding the categorization decision than given in Enclosure 4. (see PRA-10 and PRA-12b)

E4-2 (Section 4.1)
As part of a site visit, the staff would like to review the Expert Panel meeting minutes, or other relevant documentation, in order to understand the Expert Panel's basis for ranking modeled components. What criteria were used by the Expert Panel to classify valves? Were any valves classified as MSSCs based on maintenance considerations? (see PRA-7 & 8)

E4-5 (Section 4.4.5)
The sensitivity studies do not appear to adequately explore whether components could easily change from one category to another as a function of:

a. failure rates which could be age-dependent,

b. component unavailability assumptions which tend to vary with service condition, and

c. small variations of the decision criteria [i.e., F-V and RAW thresholds].

(see PRA-13 and PRA-15 through 20)

VI. QUESTIONS ON ENCLOSURE 5 - IMPLEMENTATION RESULTS AND REVIEW OF SYSTEM DRAWINGS

E5-1
Specify the testing to be performed on the MSSC that is not currently in the IST program. (see E1-5 and E3-26)

E5-2
Supply a list of the 115 valves identified as "NYL" valves. What further evaluations have been performed on these components? Have any been added to the IST program or designated for more testing commensurate to safety significance?

E5-3
Please list valves that are identified as "YYL" or "YNL" valves which are currently tested only during regular IST and would not be exercised for any other reason during plant operation, cold shutdowns, refueling outages or as a result of another IST test such as pump testing.

E5-4 (Table 2)
Describe the difference between the valves listed in Table 2 and the valves listed in Table 4 that are low risk significant and not included in Table 2. (Note that the LSSCs in Table 4 that are not included in Table 2 are predominantly manual isolation valves but also consist of some check valves, air-operated valves, motor-operated valves and relief valves.)

E5-5 (Table 4)
Describe in greater detail than contained in Enclosure 4 why these valves were ultimately ranked as LSSCs. (see PRA-12 & 13)

Valve	Description	RAW	DWG
AFAV015	AFW discharge isolation	2.38	13-M-AFP-001
AFAV016	AFW discharge isolation	2.38	13-M-AFP-001
AFAV137	AFW discharge check valve	2.38	13-M-AFP-001
AFAV024	AFW discharge check valve	8.97	13-M-AFP-001
AFAV025	AFW discharge check valve	8.97	13-M-AFP-001
AFAV138	AFW discharge check valve	8.97	13-M-AFP-001
AFNV013	AFW P01 discharge isolation	2.59	13-M-AFP-001
CHBHV0530	RWT outlet isolation	2.06	13-M-CHP-002
SIAHV0698	HPSI header discharge isolation	4	13-M-SIP-001
SIBHV0699	HPSI header discharge isolation	4	13-M-SIP-001
SIAV476	HPSI PP "A" discharge isolation	2.24	13-M-SIP-001
SIBV478	HPSI PP "B" discharge isolation	2.24	13-M-SIP-001
SPAVH0049A	Isolation for SP "A" inlet line	3.2	13-M-SPP-001
SPBVH0050A	Isolation for SP "B" inlet line	3.2	13-M-SPP-001

E5-6

There were several combinations of valves noted where [illegible] LSSC was adjacent to an MSSC and it would appear that both should be in the [illegible]me category. Below is a list of these combinations (there may be others). Please provide an explanation for each case.

LSSC Valve	MSSC Valve(s)	[illegible]
CHAHV0531	CHAV306	[illegible]-M-CHP-002
CHBHV0530	CHBV305	[illegible]M-CHP-002
CHAHV0524	CHEV429 & CHEVM70	[illegible]M-CHP-001
CHEV433	CHEV435	[illegible]M-CHP-001
SIAHV0687	SIAUV0672	[illegible]M-SIP-001
SIBHV0695	SIBUV0671	[illegible]M-SIP-001

VII. QUESTIONS ON THE USE OF PRA TO RISK-RANK COMPONENTS FOR IST

A. PRA Quality and Scope

The NRC position on PRA quality as articulated in a Staff Requirements Memorandum (SRM) dated April 28, 1995, is that IPE reviews are not of sufficient depth to allow the staff to indicate approval of, or concurrence with, the absolute values and conclusions. The Commission suggested that if there is to be further use of PRAs as a basis for risk-informed regulatory changes, then the industry should, in coordination with the staff, initiate the actions necessary to develop PRAs that are acceptable for regulatory use (i.e., standardized methods, assumptions, level of detail).

PRA-1
The submittal (Enclosure 4, Section 4.0) states that the 1994 version of the PVNGS PRA was used as the basis for the determination of quantitative risk ranking. It also states that the methodology is consistent with the EPRI PSA Applications Guide.

a. Please describe the differences between the version of the PRA used to that submitted in the IPE process. Please provide documentation of this PRA for staff review. Also, please include the cutset equation and the associated database used for the risk importance ranking.

b. In addition, please discuss the "quality" of this PRA in terms of its applicability to IST risk ranking. Note that while the quality standards suggested by the EPRI PSA Applications Guide provide high level criteria to ensure that PRAs will meet some minimum quality standard, it does not supply sufficient details to show that PRAs are adequate for risk-informed regulation such as the extension of IST intervals. A more detailed review process is required.

c. As part of the discussion on PRA quality, please provide information on the review and QA process that the PRA has gone through including internal and external reviews. Please provide review documentation to the NRC during a site visit. The staff needs to see what the review scope and process consisted of, the review findings and the resolution to these findings. (In particular, the staff needs to see if the following were addressed: consistency with analyses for similar plants; completeness in terms of systems/components modeled, HEPs modeled, IEs modeled; accuracy; realism - generic or plant specific data, modeling of as-built, as-operated plant, assumptions; and reproducibility). Please keep in mind that, in general, the IPE studies and the NRC review of these studies alone are not sufficient to support licensing actions and other safety applications.

PRA-2
Since ranking results are influenced by the reliability data assigned to the component, please provide the component unavailabilities used and note whether the data are plant specific or generic to the industry.

PRA-3
PRA models were not used for the ranking of SSCs for containment isolation, interfacing LOCAs, external events, and outage operations. Therefore ranking for these events is somewhat inconsistent with that for the internal events. Ranking within each type of initiating event without considering the overall CDF or LERF is inconsistent. Please justify your approach.

PRA-4
In terms of truncation limits used, page 24 of Enclosure 4 of the submittal stated that the final cutset equation used (after recovery was applied) contains cutsets above 1E-9. The submittal also stated that there are plans in the future to solve the model at lower limits (i.e., 1E-10 or 1E-11).

a. In the final cutset equation, were recovery actions uniformly applied to all cutsets, or only to the dominant cutsets?

b. When will the quantification results for model solutions at truncation values of 1E-10 or 1E-11 be available? In the absence of these runs, what assurance is there that the 1E-9 equation contains enough cutsets to fully represent the low ranked components? How did the licensee ensure that the importances were not underestimated because cutsets had been truncated? Note: Studies show that (with CDFs around 1E-5) truncation limits in the order of 1E-11 to 1E-14 are needed to obtain "stable" results in terms of component ranking.

c. How will the 1E-10 and 1E-11 truncated models be applied? It is envisioned by the staff that, when completed, the 1E-10 and 1E-11 sensitivity results should demonstrate whether or not the CDF and the ranking order of components at these truncation levels are reaching an equilibrium. These studies should also show the sensitivity of results to the choice of the specific numerical criteria chosen for component classification (e.g., F-V > 1E-3, F-V > 1E-2, RAW > 2).

B. Deterministic Considerations

The staff believes that criteria should be added to the ranking process so that the defense in depth concept is not jeopardized by the reduction in IST frequency. The numerical importances for some systems/components are low because of diversity and redundancy. However, changing the IST requirements for one system can influence the risk importance of other systems performing the same function. Therefore, in the absence of more detailed evaluations, there should be a requirement that redundant means exist for performing the critical safety function with components that are ranked high. Adopting this concept will also minimize the potential for inter-system common cause failures which might be introduced by the decrease in test frequency for groups of similar components.

PRA-5
A useful way to consider defense-in-depth is to study path sets (combinations of success paths) to determine if at least one success path contains SSCs that are all ranked high. Please use this approach or provide an alternative method for ensuring that defense-in-depth is maintained.

C. Expert Panel

PRA-6
According to the submittal (Section 4.1), the main objective of the expert panel (EP) is to determine the final ranking based on deterministic insights, plant history, engineering judgement, regulatory requirements and PRA insights. The EP also considered PRA limitations including evaluating IST components not modeled in the PRA, identifying components with operational concerns or non-severe accident risks, assessing impact on containment isolation, assessing impact on initiating event frequency, and assessing failures on operator response. (see E2-5)

a. The staff will need to review the guidance document to verify the process, procedures and philosophy used by the EP. The intent here is to ensure that the EP process is well defined, systematic, scrutable, and reproducible.

b. The first step in the EP process is a system level screening which is based on the Maintenance Rule screening. Please describe the system level screening criteria used for PVNGS for the maintenance rule.

c. The first page of Enclosure 5 (under the description for Table 2) states that performance histories for LSSCs are being reviewed. When will this review be completed? How will the performance histories be accounted for by the EP? Is there a systematic procedure to obtain plant specific component performances?

PRA-7
The integration of PRA insights with deterministic considerations for final ranking of components is summarized in Table 3 of Enclosure 4. This integration process allows for the EP to re-rank a component that was originally ranked by the PRA as High or Medium to a final ranking of Low. (see PRA-2)

a. The criteria to allow for this re-ranking are not clear. Are there rules specified and documented?

b. One of the EP criteria is that "components ... were considered of high safety significance unless there was a high degree of confidence in the high reliability of the component." How is the effect of lowering IST frequency on component reliability taken into account for these cases?

c. A review of Appendix C of Enclosure 4 shows that many components were ranked lower in the final analysis (than the PRA ranking) based on qualitative arguments on redundancy, and/or on low probability of failure. The fact that there is redundancy or that the failure probability is low is already factored into the PRA importance ranking. For example, the F-V rankings already account for multiple train configurations and basic event unavailabilities. The EP should only be allowed to modify the ranking in these cases if it has justifiable reasons to feel that the PRA model or input is not correct. Please justify your approach.

d. Conversely, Appendix C of Enclosure 4 also shows that many components were ranked higher in the final analysis than the PRA ranking. (Examples include the pressurizer safety valves, steam supply to the AWF pump, MSIVs, and main steam relief valves.) The likely causes of a low PRA ranking are redundancy of the components and/or low probabilities of failure. The inconsistency in the treatment of this set of components to those in the previous comment has to be resolved.

PRA-8
When component ranking is modified by the expert panel, the EP should investigate the reason why the PRA results are not correct and whether or not the PRA needs to be modified. When, the EP raises a ranking, this could imply that plant specific data or operating practices show a component to be important and should therefore be included in the PRA. When the EP lowers a rank, this could mean that PRA assumptions, input, etc. are incorrect and/or conservative. This later case could cause a masking effect on the other plant components. Please describe how these concerns were addressed. (see E4-2)

D. SSC Ranking

PRA-9
External Events risk ranking: According to the submittal (Section 4.1.3.4), "each component was reviewed to determine if it had a function during an external event that was different from the function of the component for internal events. If there was a difference in function, the relative importance was determined by assessing the impact of failure of the component and the relative likelihood of the external events." The following are staff comments on this process:

a. The above analysis, by itself, might not be sufficient because:

(i) External events could result in plant initiators (e.g., LOCAs from spurious open PORVs, seal LOCAs, LOSP or SBO, etc.) that could result in relative importances of SSCs being changed. That is, since external events (especially for fires) may contribute significantly to the internal events CDF, the initiating events they result in could cause a relative shift in the overall initiator mix. Consequently, the relative importances of systems/components depended upon for accident mitigation will also change.

(ii) Spatially dependent CCFs which are unique to the external event initiators cannot be taken into account in the simplified analysis.

(iii) The loss of one train of one or more systems (for example, from the loss of one electrical division) from these initiators could cause the relative importances of components in the other train to be changed.

(iv) Components lost as a result of the external event are likely not to be recoverable.

Based on the above, please justify your approach, or provide a revised assessment of the external event risk.

b. A preliminary review of the results in Appendix C of Enclosure 5 shows that there were no components that were re-ranked high because of external event initiators. Is this correct?

c. Does the expert panel contain members that are familiar with the seismic qualification of plant SSCs (for seismic risk) or members that are familiar with plant fire protection (safe shutdown analysis, Appendix R evaluation, etc), or are all insights from the external events evaluation provided by the PRA/IPEEE engineer?

PRA-10
Shutdown risk ranking: The submittal stated that "IST valves important to shutdown were identified by a qualitative review." (see E4-1)

a. Please provide the criteria used for this qualitative analysis.

b. For shutdown risk ranking, there has to be evidence that all shutdown modes and operations have been evaluated. Internal flooding from maintenance actions can also be important in this case. Risk from fire must also be investigated because of the removal of fire barriers during shutdown operations. Finally, one of the conclusions from the shutdown study at Surry (NUREG/CR-6144) is that the LERF risk is on the same order of magnitude as the risk at-power even though the CDF risk is an order of magnitude smaller since many shutdown operations are performed with the containment not intact. Please address the above in terms of your qualitative criteria.

PRA-11
Containment risk importance:

a. For LERF, please provide the PVNGS definition for "Large" and "Early." Please indicate which release categories in your level II study are included in the LERF definition.

b. Discuss how LERF is adequate to cover latent health risks from large, late releases.

c. Why is there a criterion for LERF RAW and not one for LERF F-V, i.e., why isn't LERF F-V used for ranking?

d. Are cutsets carried forward to the end of the Level II analysis (source term bins)? If not, how is the LERF RAW calculated?

e. What does a "yes" in the "Large Early Release RAW" column in Table 4 of Enclosure 5 signify? If this means that the LERF measure might be important, please provide the basis as to why many components with "yes" in this column are ranked low?

f. A review of Appendix C of Enclosure 4 shows that only four components (i.e., AFA-V079, AFB-V080, SPA-HV49A, and SPB-HV50A) have LERF RAW greater than 10. Of these, the first two were ranked high. Does this imply that only two valves are important to the LERF risk? Please clarify, and if applicable, point out any other components that might be important in terms of LERF.

g. The submittal stated that Level II results are dominated by SGTR (Section 5.4.5 of Enclosure 4). In the IST risk ranking, what considerations have been given to SGTR isolation?

h. Most containment isolation valves and all interfacing systems LOCA valves were ranked low either because of redundancy or low event frequency (when compared to SGTR). What is the LERF RAW for the containment isolation valves and the ISLOCA valves? Keeping in mind the defense-in-depth philosophy, shouldn't some of these valves be ranked high? Also, how will the ISLOCA initiating event frequency and the loss of containment isolation probability be affected by the proposed extended frequencies for low ranked valves (including the effects of potential common cause failures)?

<u>PRA-12</u>
Final ranking results:

a. Valves AFA-V137, AFB-V138, AFB-HV30, AFB-HV31, AFB-UV34, AFB-UV35, AFA-HV32, AFC-HV33, AFC-UV36 and AFA-UV37 were ranked as Low in Table C15 of Enclosure 4. The valves were re-ranked as high in Section 5.5.1 in the same enclosure. Please correct the inconsistency. Also, in regard to these valves, why are valves AFA-V015 and AFB-V024 ranked low when the companion valves AFA-V137 and AFB-V138 are re-ranked high?

b. The following valves had a final ranking of low even though quantitative and qualitative insights would indicate otherwise. Please provide justification for the low ranking.

Valve	Attributes which might justify a High Ranking	DWG
AFBV024	FV=0.002, RAW=8.97, LERF RAW = 4	13-M-AFP-001
AFBV025	FV=0.002, RAW=8.97, LERF RAW = 4	13-M-AFP-001
[illegible]AHV0531	FV=0.0003, RAW=2.06, Shutdown risk=M, CCF RAW = 5	13-M-CHP-002
[illegible]BHV0530	FV=0.0003, RAW=2.06, Shutdown risk=M, CCF RAW = 5	13-M-CHP-002
[illegible] AHV0657	Shutdown risk=H	13-M-SIP-001
[illegible]AHV0683	Shutdown risk=H	13-M-SIP-001
SIAHV0687	Shutdown risk=H	13-M-SIP-001
[illegible]AHV0698	FV=0.005, RAW=4, Shutdown risk=H, CCF RAW=5	13-M-SIP-001
[illegible]IAV201	Shutdown risk=H	13-M-SIP-001
[illegible]AV404	Shutdown risk=H, CCF RAW=4	13-M-SIP-001
SIAV424	Shutdown risk=H	13-M-SIP-001
SIAV434	Shutdown risk=H	13-M-SIP-001
SIAV435	Shutdown risk=H	13-M-SIP-001
SIAV451	Shutdown risk=H	13-M-SIP-001
SIAV470	Shutdown risk=H	13-M-SIP-001
SIAV476	RAW=2.24, Shutdown risk=H, CCF RAW=5	13-M-SIP-001
SIAV522	Shutdown risk=H	13-M-SIP-002
SIAV523	Shutdown risk=H	13-M-SIP-002
SIAV957	Shutdown risk=H	13-M-SIP-002
SIBHV658	Shutdown risk=H	13-M-SIP-001
SIBHV692	Shutdown risk=H	13-M-SIP-001
SIBHV695	Shutdown risk=H	13-M-SIP-001
SIBHV0699	FV=0.005, RAW=4, Shutdown risk=H, CCF RAW=9	13-M-SIP-001
SIBV200	Shutdown risk=H	13-M-SIP-001
SIBV402	Shutdown risk=H	13-M-SIP-001
SIBV405	Shutdown risk=H, CCF RAW=4	13-M-SIP-001
SIBV426	Shutdown risk=H	13-M-SIP-001
SIBV446	Shutdown risk=H	13-M-SIP-001
SIBV447	Shutdown risk=H	13-M-SIP-001
SIBV448	Shutdown risk=H	13-M-SIP-001
SIBV478	RAW=2.24, Shutdown risk=H, CCF RAW=5	13-M-SIP-001
SIBV532	Shutdown risk=H	13-M-SIP-002
SIBV533	Shutdown risk=H	13-M-SIP-002
SIBV958	Shutdown risk=H	13-M-SIP-002
SPAHV0049A	FV=0.0013, RAW=3.2, LERF RAW=50, CCF RAW=5	13-M-SPP-001
SPBHV0050A	FV=0.0013, RAW=3.2, LERF RAW=50, CCF RAW=5	13-M-SPP-001

E. Risk Metrics and Numerical Decision Criteria

PRA-13

A comparison of the PVNGS decision criteria to trial criteria being considered by the staff is as follows:

	Palo Verde IST*			
	FV < 0.001	FV ≥ 0.001	FV ≥ 0.005	FV ≥ 0.01
RAW ≥ 10	H	H	H	H
RAW ≥ 5	M	M	M	H
RAW ≥ 2	M	M	M	H
RAW < 2	L	M	M	H

* Also, ranking is M if CCF RAW ≥ 5, and is H if CCF RAW ≥ 10

	Staff Trial Criteria			
	FV < 0.001	FV ≥ 0.001	FV ≥ 0.005	FV ≥ 0.01
RAW ≥ 10	H	H	H	H
RAW ≥ 5	M	H	H	H
RAW ≥ 2	M	H	H	H
RAW < 2	L	M	H	H

Example Ranking Using Palo Verde IST Components

	Number of Components			
	High	Medium	Low	Total*
PVNGS Criteria	8 (1.3%)	39 (6.3%)	572 (92.4%)	619
Proposed Criteria	32 (5.2%)	15 (2.4%)	572 (92.4%)	619

* Total includes 172 IST components that are truncated in IPE and 350 IST components that are not modeled in the IPE. For the purposes of this comparison, these were added to the low category.

The above trial criteria is based on (i) the staff's belief that the components with RAW > 10 should be ranked high regardless of the F-V value; and (ii) a F-V > 0.001 would result in ranking results that are more stable when truncation levels in the range of 1E-9 or 1E-10 are used.

As can be seen above, the PVNGS criteria are similar to the trial NRC criteria (if we assume that the PVNGS medium's are ranked as high). If you adopt the staff criteria, the following 24 PVNGS components will be added to the high category (in terms of PRA ranking).

Component	Final Ranking by PVNGS Expert Panel		DWG
AFAV079	H		13-M-AFP-001
AFBV024	H		13-M-AFP-001
AFBV025	H		13-M-AFP-001
AFBV080	H		13-M-AFP-001
AFBV138	H	originally ranked L but re-ranked H in Section 5.5.1 in Enclosure 4	13-M-AFP-001
AFAHV0054	H		13-M-AFP-001
SGAUV0134A	H		13-M-SGP-001
SGAUV0138A	H		13-M-SGP-001
SIAUV0617	H		13-M-SIP-002
SIAUV0627	H		13-M-SIP-002
SIAUV0637	H		13-M-SIP-002
SIAUV0647	H		13-M-SIP-002
SIBUV0616	H		13-M-SIP-002
SIBUV0626	H		13-M-SIP-002
SIBUV0636	H		13-M-SIP-002
SIBUV0646	H		13-M-SIP-002
SPAHV0049A	L		13-M-SPP-001
SPBHV0050A	L		13-M-SPP-001
SIAHV0698	L		13-M-SIP-001
SIBHV0699	L		13-M-SIP-001
SIAHV0604	H		13-M-SIP-001
SIBHV0609	H		13-M-SIP-001
SICHV0321	H		13-M-SIP-002
SIDHV0331	H		13-M-SIP-002

As can be seen above, of the 24 new "high" components, 18 were already ranked as high by the PVNGS expert panel. The remaining six that were ranked low are also present in the "inconsistent" list provided in comment PRA-12b and should therefore also be ranked high based on other considerations. Please justify the PVNGS criteria or justify why any of the above 24 components should be ranked as low. (see E1-2 and E5-5)

PRA-14
Another potential risk-ranking approach that we have given some consideration to is shown in the plot of Figure 2. Some typical basic event data are shown plotted as Fussell-Vesely importance ranking vs Birnbaum ranking. The data points are shown in some tentative quadrants, Hi-Hi, Lo-Lo, Hi-Lo, etc. Would the Expert Panel gain any useful insights by evaluating such a plot? Would it have any significant effect on the ranking results?

F. Sensitivity Studies

PRA-15
Effect of initiating events on ranking: Detailed modeling of initiating events (to the component level) is generally required to properly rank components. Representing initiating events (especially those caused by the loss of support systems) by single frequency numbers (black box model, modules, etc.) will result in inaccurate rankings for components within

support systems and balance-of-plant components. The PVNGS IST submittal (Section 4.1.3.3) followed a slightly different strategy in that it looked for "those components whose failure would directly cause an initiating event and those components whose failure could cause a complicated initiating event without operator action to prevent the event." These components would be ranked high unless the failure probabilities were extremely low.

a. A review of Appendix C of Enclosure 4 shows that there were no components that were ranked above a "low" in the "IE" column. Does this mean that the failure of all components which could result in a plant initiator was either easily recoverable by operator actions or was very low in frequency? Please list, by component, the HEP or the failure probability of components which might result in plant transients?

b. Please justify why the lack of detailed modeling of plant initiators (for example using fault tree models) will not impact the component rankings of the support systems involved.

c. How has the loss of balance-of-plant systems (like MFW and condensate) been considered in terms of initiating events? How does this affect the IST ranking of BOP valves?

PRA-16

Effect of CCFs: PRA ranking should assure that (a) ranking of components in the low category is not the result of lack of or low estimates for CCF contributions; and (b) the ranking and categorization are robust against the uncertainties associated with CCF contributions. This issue can be addressed first by re-examining the CCF rates for the low category components to make

sure the PRA assumptions are valid, and secondly by setting all CCF rates to zero and investigating which low category components may become important.

In the PVNGS submittal (Section 4.2.1), a study was done (by calculating CCF RAW) to determine the effects of having CCF rates that might be too low. However, the second part of the sensitivity study is not addressed. This would involve setting all CCF rates to zero and investigating which low category components may become important. In this way, components where CCF was not modeled will not be masked by those where CCF might dominate. Also, components that were ranked low because CCF was not included in the PRA model would be revealed. Please provide this second sensitivity study so that there could be assurances that the assumption of no CCF for certain components will not affect ranking. Also, please address the fact that the assumption of no CCF for certain components is still valid, even with extended IST frequencies.

PRA-17
Effect of human recovery actions: Large uncertainties associated with recovery actions, and the non-uniform application of recovery actions (which are usually applied only for the dominant sequences) can mask out the importance of some components. The issue can be addressed by performing ranking with and without recovery actions. The submittal (Section 5.4.6.2) stated that there are plans to perform this sensitivity study before implementation of risk based IST program. When will this be completed? Please make available the results of this study for NRC review.

PRA-18
Multiple component importance: There has to be assurance that the aggregate effect of components that are ranked low cannot impact risk significantly as a result of relaxing requirements. Two approaches were identified by the staff to study the potential effects of the failure of a group of components: first, to examine those minimal cutsets containing two or more components belonging to the low category, and secondly, performing sensitivity analyses by increasing the failure rates of components in the low category to identify those sequences and minimal cutsets that are most affected.

The submittal (Section 5.4.6.4) stated that no plant specific study on the effect of multiple component failures has been done to date. In a joint effort with Comanche Peak, PVNGS wants to study CPSES results to see if this is an important issue. If important, PVNGS plans to perform this sensitivity study before implementation of the risk-based IST program. How does PVNGS plan to justify that the CPSES comparison is valid since multiple component considerations are very configuration specific (and thus, plant specific)?

PRA-19
Ranking from dynamic plant configurations: An evaluation should be made to determine the impact on ranking if the static PRA is modeled to reflect the on-line maintenance strategies. It is expected that some components that are ranked low in the static model be shifted to the high category for specific

maintenance states. The areas where this might be important are periods where there are scheduled maintenance or rolling maintenance when pre-specified sets of components are brought down for maintenance for a pre-specified amount of time.

The submittal (Section 5.4.6.5) states that PVNGS plans to perform a sensitivity study for the 12-week maintenance schedule before implementation of RB IST program. When will this be completed? Please make available the results of this study for NRC review.

PRA-20
PRA Uncertainty: One of the ways to check for uncertainty effects is to identify the major uncertainties in the PRA and to evaluate the effects on the risk importance. The evaluations can be qualitative or quantitative. The PRA modeling effects on risk importance evaluations can be evaluated by using sensitivity calculations (like those proposed above). The effects of PRA data uncertainties can be evaluated by carrying out uncertainty propagation for selected risk importance values. An importance analysis using the fifth and ninety-fifth percentile of the unavailability distributions could be performed to determine the range of variations in F-V measures. Ranking of some components with large uncertainties (such as check valves) could vary and these components should be ranked in the higher category to account for the uncertainty distribution. Please describe how uncertainty has been addressed in the PVNGS risk ranking process.

G. Verification and Validation Cases

PRA-21
A calculation was performed to determine the increase in CDF due to the increase in failure probabilities of LSSCs. CDF, LERF and public consequences were re-calculated using the increased failure probabilities.

It is not documented how the sensitivity calculation was performed, whether or not the core damage cutsets were re-generated with the modified basic event probabilities. If the cutsets were not regenerated, serious numerical errors could occur. The main reason is that the base case core damage cutsets were generated with a truncation limit of 1E-9, and those basic events with F-V less than 0.001 may have barely survived the truncation. If a lower truncation were used, many additional cutsets and basic events would have appeared. These additional cutsets constitute the error due to non-re-generation of the cutsets. Please provide evaluation details on this V&V study.

PRA-22
In the V&V sensitivity study, the test interval was varied; however, the failure rate was left constant. Given the fact that the study increased test intervals by factors of up to sixty, it is very hard to postulate that the failure rate would stay constant. [Data that are available are based on the current test intervals, i.e., 3 months, 1 year, or maybe 18 months. Therefore, to apply the current failure rates for test intervals of up to 6 years is not justified.] The staff does not have confidence that constant

failure rates would be valid for the test intervals proposed in the submittal. It would be logical to assume that after a certain time period the effects of aging, corrosion, material deposition etc., will result in an increase in component failure rates.

PRA-23
The V&V results are based solely on increases in the internal event initiators. How would this increase be affected when external events and shutdown risks are included?

PRA-24
Does V&V include the potential increase in initiating event frequencies for the failure of support systems and components that are ranked as LSSC?

H. General Questions / Points for Clarification

PRA-25
In the summary and conclusions, a statement was made that "results ...[were] found to be safety neutral by an evaluation of cumulative effects." The staff does not necessarily consider increases in CDF by 8 percent and LERF by 18 percent to be safety neutral even though these small changes are likely within the bounds of the uncertainty for the analyses. A statement was also made that the risk based IST program "can be achieved while maintaining or even improving plant safety." However, the only "improvement" that is listed in the submittal (Enclosure 5, Table 3) is the identification of a non-IST valve AFNV012 as MSSC. This AFW discharge check valve will be verified to be closed once every shift by checking the temperature of the piping between the pump and the valve. This "testing" is currently done, and credit for this action is apparently already taken in the IPE since steam binding of the non-class AFW pump is not a dominant failure mode. Therefore "improving plant safety" as a result of the IST risk based program is misleading.

In summary, the staff does not believe that the above statements on risk neutrality and improvement of plant safety are appropriate unless you can quantify this risk decrease.

PRA-26
Table B2 of Enclosure 4 lists the Maintenance Rule low risk significant systems. Because the systems are ranked low, components within these systems are also ranked low for the IST risk ranking. Please address the following concerns:

a. The feedwater, condensate, and instrument & service air systems contain components that are potential plant trip initiators. Please justify how all components in these systems are ranked low.

b. The control building HVAC is ranked low. Please address the effects of the loss of control room HVAC on equipment operation and on operator action.

c. The containment isolation system is ranked low. However, failure of containment isolation will result in a significant increase in LERF. Please justify why containment isolation valves can be ranked low.

PRA-27

In Table D2 of Enclosure 4, "Changes to Basic Event Probabilities," please address the following apparent inconsistencies:

a. For valve AFAV007, the tabulated increase was by a factor of 36. Increasing frequency from quarterly to 3 years should only increase probability by 12.

b. For valves CHAHV531 and CHBHV530, the test interval was listed as four months. Table 2 of Enclosure 5 lists this interval as 18 months (CSG).

c. For valve SGAUV500P, the probability included the impact from the 500J valve. How about the impact from the 500S and the 500R valves?

PRA-28

In Table D3 of Enclosure 4, "Changes to Unavailabilities for Alternate Test Intervals," the unavailabilities for valves AFAB015, AFBV024, SIBV405, and SIAV404 appear to be slightly in error. According to our calculations, these unavailabilities should be 7.88E-2, 1.18E-1, 1.58E-1, and 1.97E-1 for the 6-year, 9-year, 12-year, and 15-year intervals, respectively. Please justify or make the appropriate corrections.

Attachment: Figure 1/Figure 2

Figure 1 PLOT OF RISK ACHIEVEMENT WORTH VS. FUSSELL-VESELY WORTH FOR A TYPICAL PLANT SHOWING LARGE NUMBERS OF COMPONENTS THAT DO NOT CLEARLY FALL INTO A SPECIFIC RANKING CATEGORY

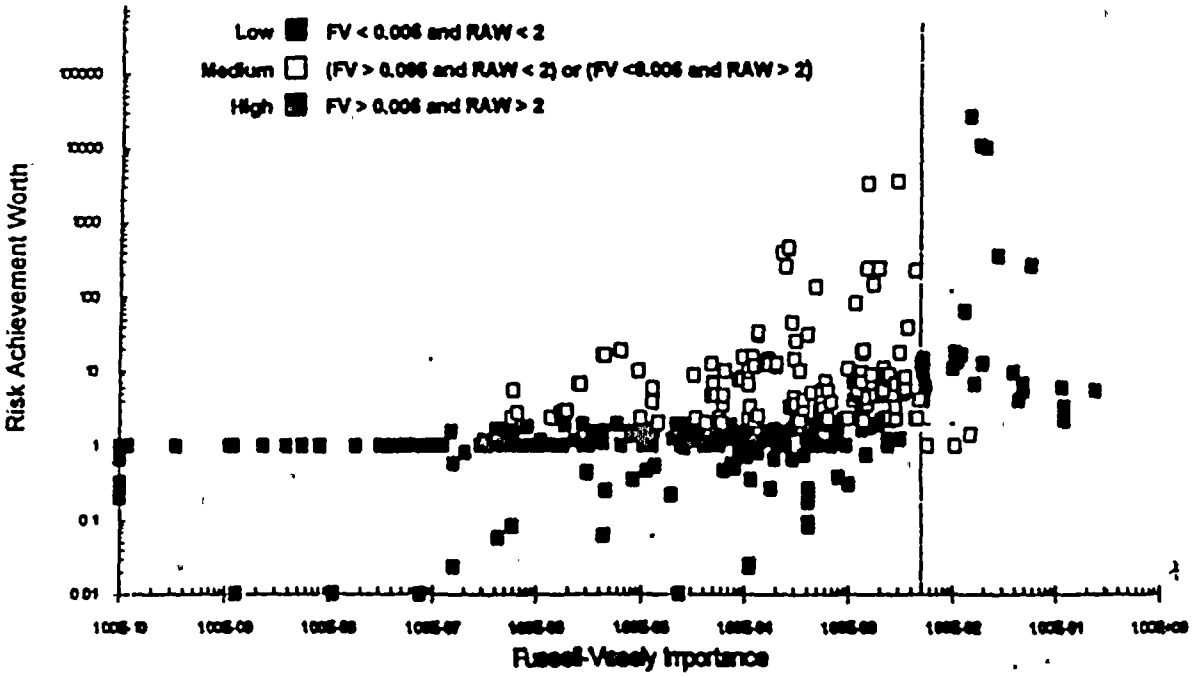
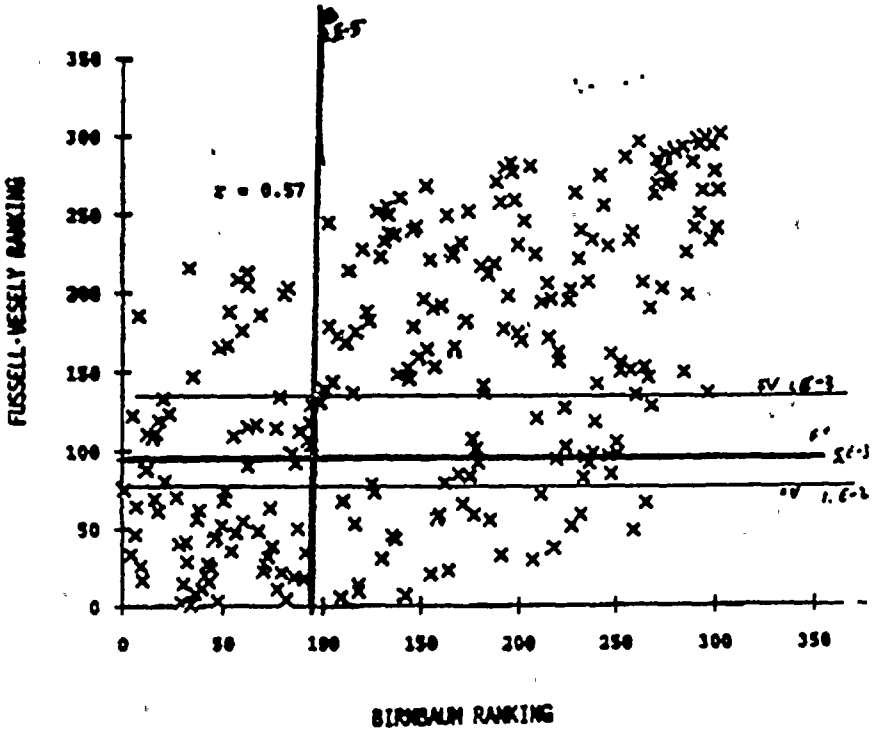


Figure 2 FOUR-QUADRANT SCHEME FOR RANKING BASIC EVENTS BASED ON A PLOT OF FUSSELL-VESELY RANKING VS BIRNBAUM RANKING



COMANCHE PEAK STEAM ELECTRIC STATION, UNITS 1 AND 2

DOCKET NOS. 50-445, AND 50-446

REQUEST FOR ADDITIONAL INFORMATION REGARDING

RISK-INFORMED INSERVICE TESTING (RI-IST) PILOT PLANT

The following are the initial questions and comments that have been developed by several NRC staff reviewers who have been reviewing the Comanche Peak Exemption request. We have attempted to remove redundant questions from the different reviewers and to order the questions generally according to the order of the material presented in the submittal. There may be some redundancy remaining. In the responses to these questions, it is acceptable to refer to other questions for parts of answers or to other documents when that would be appropriate.

I. GENERAL QUESTIONS INCLUDING THOSE RELATED TO THE CPSES TRANSMITTAL LETTER

G-1 (page 1 transmittal letter)
In the second paragraph of this page, it is stated that the methodology described in this document is consistent with the EPRI/NEI PSA Applications Guide generally. Please identify the areas that you consider significant where you deviated from the guidance in the PSA Guide and your reasons for doing so.

G-2 (page 1 transmittal letter)
It is indicated that the proposed risk-based process utilized the CPSES IPE and IPEEE. Were there any significant changes that needed to be made to the IPE and IPEEE PRA models? If so, please identify each change made and indicate its perceived importance with regard to this application.

G-3
Are there any plans to perform partial-stroke testing of any check valves classified as LSSCs during the deferred testing period? (see E5-9)

II. QUESTIONS ON ENCLOSURE 1 - EXEMPTION REQUEST

E1-1
The exemption request (pages 2 of 4 and 4 of 4) states that:

> The Risk-Based IST Program Description may be revised without prior NRC approval, provided the changes do not have an adverse impact on plant safety.
>
> This provision is similar to the change process for other Licensing Basis Documents such as the Security Plan. The regulations for the Security Plan allow changes without prior approval provided there is no unreviewed safety question or the effectiveness of the Plan is not reduced.

More specific criteria need to be developed for determining if a change (i.e., to the NRC-approved risk-informed inservice testing (RI-IST) program) will have an adverse impact on plant safety. In the case of the Security Plan, the NRC relies on the criteria contained in 10 CFR 50.59 to determine if the proposed change involves an unreviewed safety question. These criteria may not be appropriate for this application.

a. Please list and describe the types of revisions to the IST program that would be made without prior NRC approval if the exemption request is granted.

b. Also, in cases when NRC approval is not required, what criteria will be used to determine when the NRC will, however, be notified of the revisions?

E1-2
The exemption request (page 2 of 4) states that:

> Compliance with this exemption request constitutes compliance with 10 CFR 50.55a and the existing CPSES Technical Specifications.

Staff approval of an exemption from the requirements of 10 CFR 50.55a (f) does not relieve the licensee of its responsibility to comply with Technical Specifications (TS).

E1-3
The exemption request (page 3 of 4) states that:

> Even though the components [that are identified as being more safety significant] are outside the Code class boundary, they will be tested commensurate with their safety significance. The expert panel will determine the appropriate compensatory measures for the safety function.

The Risk-Based IST Program Description needs to describe how the expert panel will go about doing this. (see PRA- 7 & 8)

E1-4
The exemption request (page 3 of 4) states that:

> Components in the current ASME Section XI IST Program which are determined to be MSSCs will continue to be tested in accordance with the current Program.

The licensee should describe its method for determining the test frequencies of both the LSSCs and MSSCs. If the test frequency for the MSSCs was based solely on the Code test frequency, and not through a risk analysis, discuss why this is acceptable.

E1-5
The exemption request (page 3 of 4) states that:

> LSSC will also be tested in accordance with the ASME Section XI IST Program, except that the test frequency will initially be extended to once every 6 Years.

The test interval for LSSC must be supported by performance data such that the licensee can reasonably expect to find that the component is functional when the inservice test is performed. A risk analysis should be supported by performance data for the proposed test interval, i.e., the PRA should be supplemented by deterministic methods, such as performance history and operating experience, to evaluate the acceptability of the proposed test frequency. Furthermore, there should be a performance based feedback mechanism in place to ensure that any ineffective test strategies that get implemented are promptly detected and revised. Please discuss.

E1-6
The exemption request (page 4 of 4) states that:

> The risk-based process will assure that a defense-in-depth philosophy is maintained.

The licensee should specifically describe how the process will assure that defense-in-depth will be maintained. (see PRA-5 & 6)

E1-7
The exemption request (page 4 of 4) states that:

> There are safety enhancements obtained by focusing resources on MSSCs and reducing the testing frequency on LSSCs.

Please describe how the licensee's proposed risk-based IST process focuses resources on the MSSCs. (see E1-4 and E3-1 & 3)

E1-8
Enclosure 1, page 4 of 4: "As a living process, components will be reassessed periodically to reflect changes in plant configuration..." Please define "periodically." (see E2-5)

III. QUESTIONS ON ENCLOSURE 2 - RISK-BASED IST PROGRAM DESCRIPTION

E2-1
The Risk-Based IST Program Description (page 1 of 2) states that:

> The proposed exemption is a risk-based process to determine the safety significance and testing frequencies [emphasis added] of components in the ASME Section XI IST Program ...

This seems somewhat misleading in that the risk-based process does not appear to adequately determine the appropriate test frequency for the LSSCs. It evaluates the risk significance of extended test intervals based on certain assumptions but it does not appear to determine the optimal test interval based on performance data, component unavailability, and risk insights. (see E1-5)

E2-2
The Risk-Based IST process proposed by the licensee (page 2 of 2) will review the test strategy of MSSCs not in the ASME Section XI Program to ensure that testing is performed commensurate with their safety significance. How will the licensee determine the test strategy for these components? Would it be beneficial to do a similar evaluation for MSSC in the ASME Section XI program? (see E4-16).

E2-3
The Risk-Based IST Program Description (page 1 of 2) states that:

> Extended test frequencies will be phased in over the initial 6 year period in order to take advantage of the benefits that can be obtained through sampling techniques. Groups of components will be established using sampling based on guidance provided in NUREG 1482. Components in each group will be tested during each fuel cycle so that each component is tested at least once every 6 years.

The NRC will need to review the actual component groupings, the detailed grouping criteria, and sample expansion criteria in order to evaluate the adequacy of this phased-in approach. Also, please describe the implementation schedule to achieve deferred testing on a staggered basis.

E2-4
The Risk-Based IST Program Description (page 2 of 2) states that:

> When an LSSC on the extended test frequency fails to meet established test criteria, corrective actions will be taken in accordance with the CPSES corrective action program. This corrective action will include an evaluation of the need to test the remaining components in the group.

Describe the CPSES corrective action program. What criteria would be used to initiate testing of the remaining LSSC components in that group? The corrective action should explicitly include consideration of the need for revising the test frequency.

E2-5
Describe the periodic reassessment (page 2 of 2) that would be performed on the PRA. What events or findings would be required to initiate an update to the PRA? The periodic reassessment section of the Risk-Based IST Program Description should be revised to clarify that both the component importance ranking and the test frequency will be periodically reassessed. (see E1-8)

E2-6
If it is to be used, describe how the ASME Code Case OMN-1, "Alternative Rules for Preservice and IST of Certain Electric Motor Operated Valves in LWR Power Plants," may be used in conjunction with the risk-informed IST program.

IV. QUESTIONS ON ENCLOSURE 3 - RISK RANKING DETERMINATION STUDY SUMMARY REPORT

E3-1
The Background section (i.e., Section 1.0) states that "changes that negligibly reduce plant safety should not be ruled out, especially if such changes can lead to significant plant performance improvements in other areas." The licensee should be more specific about what these other "significant plant performance improvements" are. How are the resource savings being "focused" on the MSSCs? (see E1-[illegible] and E3-3)

E3-2
The Project Scope and Objectives section (i.e., Section 2.0) states that "The ASME O&M Committee is reviewing the more safety significant components to ensure that the appropriate tests are identified and performed on those components for their respective failure modes." The licensee should clarify the relevance of this activity to their exemption request (i.e., does the licensee anticipate incorporating revised ASME Code test strategies into their risk-informed IST program?). Please give us any updated information about the schedule for this activity and how the licensee plans to evaluate the potential value of utilizing this information in its IST program.

E3-3
In the Project Scope and Objectives section (i.e., Section 2.0) under Direct Safety Enhancements, it states that:

> Greater attention and resources devoted to the high priority IST components could translate into many direct safety enhancements. First, this group of components could be subjected to, where practical and meaningful, more frequent periodic tests than the lower priority groups. The timeliness of any problem identification and resolution would be improved. Second, requirements associated with the high priority group of IST components are expected to be more rigorous and demanding in nature than for other groups. These requirements provide added assurance that any problems that may impact the functionality of the components will be identified and resolved.

It is unclear how the "improvement" and "added assurance" will be realized. (see E1-4 & 7, E2-2 and E3-1)

E3-4
The Project Approach section (i.e., Section 3.0) states that "the strength of this risk based IST program and the integrity of its results lie in the robustness of the methodology and in the work of the Steering Committee and expert panel." Therefore, the specific activities of the Steering Committee and expert panel need to be documented along with the basis (i.e., including decision criteria) used in arriving at their conclusions. (see PRA-7)

E3-5
In the Methodology section (i.e., Section 3.1), the licensee states:

> If RAW was significant, the component was considered by the expert panel for placement in the high category. If the panel decided the component could be ranked low, an additional requirement was imposed before a component could be classified as "less risk significant." A compensatory measure was required to be selected by the expert panel to limit degradations in reliability.

There are 32 IST components that had RAW > 2 that were categorized as less safety significant (e.g., 1-HV-2333A, 1-HV-2334A, 1-HV-2335A, 1-HV-2336A, 1CC-0060, 1CC-0061, 1CC-0621, 1CC-0062, 1CC-0657, 1CC-0694, 1CC-0713, 1-HV-4699, 1-HV-4700, 1CC-1075, 1CC-1077, 1CC-1078). How did component reliability and redundancy play into the expert panel's ranking decisions and what criteria did they use? Please describe the compensatory measures for each component and justify how each measure provides equivalent functional benefit compared with ranking the component in the high category.

E3-6
In the discussion of sensitivity studies (i.e., Section 3.3) conducted to test the completeness of the models, assumptions, and input data, it states:

> Less risk significant components were assumed to be influenced two at a time. Four such components were identified which, together with other components, offered the potential of becoming more risk significant. Appropriate compensatory actions designed to limit reliability degradations were imposed on these components.

What were these components and what were the compensatory actions imposed on them? What were the results of the sensitivity study conducted to evaluate whether changes to inservice testing offered the potential for common-cause-like degradations in components of different systems?

E3-7
In discussing the cumulative effects of test interval changes (i.e., Section 3.4), the licensee states that "calculations indicate that the test intervals could be increased from quarterly to six years or more with acceptable increases in risk." What is the licensee's basis for determining an acceptable level of risk? In addition, a linear extrapolation of the component unavailability may not be justified because it does not take into consideration potentially age-dependent failure rates. (see PRA-24)

E3-8
The staff would like a copy of the CPSES procedures (see Section 3.6) or program documents that "provide assurance that failures of IST components will be promptly identified and addressed and modifications to the inservice testing program (e.g., changes to the surveillance intervals) are made in a timely manner."

E3-9
The staff would like to review the detailed system notebooks, the human reliability analysis, and the results of parts of the independent IPE review activities during a site visit. (see PRA-1)

E3-10
In the Summary of Expert Panel Process (i.e., Section 4.1), it states that "[i]n more than one case, a component's ranking was increased to high because inservice testing helped prevent entry into a limiting condition for operation (LCO)." What are the specific components involved? How did the expert panel identify them?

E3-11
Based on the Summary of Expert Panel Process (i.e., Section 4.1), it is not clear that the expert panel was sufficiently aware of the assumptions and limitations associated with the IPE (e.g., completeness issues) to adequately compensate for them. It also was not clear how the expert panel dealt with specific concerns that the IPE did not model (e.g., fires, tornadoes, shutdown risk, seismic concerns, etc.). What guidance and decision criteria were used by the panel for each of these issues? (see E3-16 and PRA Section D)

E3-12
What criteria were used to evaluate components that were not modeled in the CPSES IPE (i.e., other than components whose failure might affect redundant trains and were subsequently ranked high)?

E3-13
Figure 3-1 of Enclosure 3 provides a decision criterion for risk importance measures. This criterion is not consistent with that discussed in the summary and conclusions in Section 4 or with the Summary of risk ranking results provided in Table 4-1. Specifically, a "medium" category is introduced in the conclusions, and in Table 4-1 "high" F-V refers to FV>0.01 not FV>0.001 as shown in Figure 3-1. Although, in final IST ranking, all "medium" F-V components were ultimately ranked high, the introduction of a medium category is somewhat confusing. Please clarify.

Questions E3-14 through E3-16 relate to Table 4-1 of Enclosure 3

E3-14
There should be a detailed explanation as to why components changed from one category to another as a result of the expert panel process (e.g., a detailed evaluation sheet for each component). For example,

- DG fuel oil transfer pumps with high F-V and RAW were ranked LSSC.
- SI accumulator upstream injection check valves were not modeled but were ranked MSSC.
- Containment spray pumps were not modeled but were ranked MSSC.
- Boric acid transfer pumps were not modeled but were ranked MSSC.
- Bonnet relief valves for CIVs 1-8811A/B were not modeled but were ranked MSSC.
- SW vent paths for water hammer protection were not modeled but were ranked MSSC.
- CR A/C accumulator instrument air supply upstream and downstream check valves were not modeled but were ranked MSSC.
- SIP/CCP suction header cross-tie isolation valve was modeled but was ranked MSSC.

E3-15
In Tables 4-1 and 5-1, what is the difference between N/A and None in the columns (e.g., initial ranking column)? What does it mean when a component, such as the SI pump suction valves, have a F-V and RAW calculated but the initial ranking is listed as "None?" Why does it say "low" for certain ranking changes due to expert panel review (i.e., as opposed to increased, decreased, or no change)?

E3-16
How did the expert panel deal with IPEEE Fire & Tornado FV Ranking, Outage Risk Ranking, LERF Ranking, Seismic Risk Ranking, CDF Ranking Changes w/o CCF? What decision criteria were used? Was there an orderly procedure to address each of these issues? How did the expert panel deal with other limitations of the PRA (e.g., truncation limits, generic vs. plant specific failure rates and unavailability information)? (see E3-11 and PRA Section D)

V. QUESTIONS ON ENCLOSURE 4 - RISK RANKING DETERMINATION STUDY

E4-1
The costs identified in the Risk Ranking Determination Study (pp 1-2/3) and in the Summary Report (pp. 1-2/3) inappropriately assume that design basis testing (i.e., as described in the letter from James E. Richardson, NRC, to Forrest T. Rhodes, ASME, dated 9/9/91) is or will be required for all components currently in the plant IST program.

E4-2
On page 2-1 of the licensee's submittal it is stated that the scope of this project is to optimize the safety benefits in assuring pump and valve performance. How will this be done if the only substantive change to the IST program is to extend the test interval for the LSSC components (other than adding a few MSSC not in the current IST program and taking compensatory measures for components with RAW > 2 determined to be LSSC)? If component wear out and operator burden are the reasons, what data support this claim?

E4-3
The Indirect Safety Enhancement section (p. 2-2) states that "these analyses identify important scenarios that provide information with regard to the operational demand that may be placed on a given component. Such information is valuable because it relates the performance of the IST component to the broader context of plant safety." How is this information used to adjust the IST program?

E4-4
On page 3-2 of the licensee's submittal it states that "it was important to ensure that a reduction in test intervals [presumably "frequency" as opposed to "interval"] did not allow unintended consequences, i.e., a compromise in safety resulting from a degradation in reliability." How does the licensee plan to monitor LSSC performance or reliability to ensure that it will not degrade (i.e., including LSSC with RAW < 2)? Please discuss why the current Code test methods are acceptable for components whose test interval will be extended. Could extending the test interval make different failure causes (e.g., age dependent failure mechanism) more important to detect? Will the current Code test detect these failures or impending failures?

E4-5
On page 3-5 of the licensee's submittal it states that "there was a systematic review of components that were not explicitly modeled in the IPE." How was this review conducted? Please identify the components that were reviewed.

E4-6
In the first paragraph on page 4-3, a statement was made that the RAW provides a measure of functional importance that is independent of the reliability of the component. Please explain.

E4-7
On page 4-4 of the licensee's submittal it states that "if the assessment of common-cause events results in a group of components having a significant impact on CDF, then those components should be added to the high importance category as well." What components were added to the high category based on common cause failure (CCF)?

E4-8
Table 4.1-3 identifies 20 components that were more risk significant for fire [and tornado] than they were in the IPE. The section on Fires and Tornadoes goes on to state that:

> The expert panel confirmed that the basis for the ranking and the corresponding risk insights were reasonable (i.e., the risk importance of these components increased because the direct effects of the external event affected the ability of components in the opposite train to perform their intended function).

How does a fire in one train affect the ability of a component in the opposite train to perform its intended function (i.e., as opposed to increase the importance of the component in the opposite train)?

E4-9
On page 4-13 of the licensee's submittal it states that "[t]he experience data (Ref. 9, Appendix A) shows that some pumps wear out faster after earthquakes, possibly because of mis-alignment; however, given the relatively short mission time, this is not an important consideration." What is the basis for this conclusion?

E4-10
In the Outage Risk Importance section (p. 4-15) it states that "components in key trains were ranked into three categories using a qualitative set of rules." The rules are then summarized on pages 4-18 and 4-19. Why was outage risk importance considerations limited to components included in the IPE?

E4-11
On page 4-17 of the licensee's submittal it states that "[t]here can be times when almost any component can become more risk significant depending on the outage scenario." It is not clear if the licensee has a rigorous process for dealing with dynamic risk as it relates to risk ranking for IST purposes. Please discuss. (see PRA-21)

E4-12
It is not clear how each of the seven safety functions identified on page 4-15 as being important to shutdown risk are addressed in the discussion of outage risk. This section (i.e., Section 4.1.3) discusses specific safety functions and system configurations but it is not clear from reading the licensee's submittal what methodology was used by the expert panel in order to ensure comprehensive and repeatable results (e.g., the expert panel decided to require compensatory measures if certain valves [important to LERF or

containment isolation] were not otherwise ranked high). It was not clear from reading the licensee's submittal how the expert panel reconciled Category 1/Category 2/Category 3 ranking components important to outage risk with High/Medium/Low rankings for components associated with back-end considerations and with MSSC/LSSC based on direct IPE/PRA results (i.e., a given F-V or RAW value).

E4-13
Table 4.1-5 and the CIV write-up on page 4-27 are inconsistent (i.e., 1-8153 vs 1-8152).

E4-14
As part of a site visit, the staff would like to discuss and review more detailed documentation of the expert panel's deliberations and meeting minutes (not just the summary of the results as presented in Tables 4.4-1 and 4.4-2) in order to understand the basis for ranking unmodeled components. For example, why were the unmodeled SG safety valves categorized low by the expert panel? On page 4-33 of the licensee's submittal it states that the expert panel's evaluation of unmodeled components were documented in two forms. What documentation, other than the expert panel meeting minutes, is available? (see PRA-7)

E4-15
In the High-Risk Components section (i.e., § 4.1.6) it states that:

> An evaluation of such components was done as part of this study. This involved careful evaluation of the IPE modeling assumptions and conservatisms, component failure modes, operator action, recoveries and any other effects that could substantiate the ranking. These were reviewed by the expert panel.

How was this careful evaluation and review conducted? What methodology was used and how was it documented (the detailed process that led to the reported results)? (see E4-30 and PRA7)

E4-16
Table 4.4-2a states that for instrument air relief valves not protected by check valves that can depressurize the common header:

> An evaluation will be performed to determine the appropriate equivalent IST compensatory actions for the IPE failure modes.

The staff needs to understand the evaluation and know the alternative IST proposed before it can approve the exemption request. Why is testing for the IPE failure modes appropriate for MSSC not in the current IST program and not for the other MSSC (i.e., components that are already in the current IST program)? (see E2-2)

E4-17
The CST to AFW pump isolation valves and the PMP/CCP suction cross-tie valve are shown (in Table 4.4-2a, High Ranked IPE Components Not in the Current IST Program) to be MSSC by the IPE and expert panel, but the Compensatory Actions and Comments sections state:

> No applicable inservice test for normally open manual valves without remote position indication.
>
> Current plant programs are adequate to maintain a low failure probability. Programs include the quarterly IST pump test which will verify position is open and either the locked valve program or position surveillances every 30 days per technical specifications. The IPE did not credit operator recovery by opening the valve if it was left closed.

It is not clear that the IPE failure mode that caused these valves to be MSSC are addressed by the proposed test strategy. While the quarterly pump test may be adequate to test the suction valve, the risk-based IST program should document the testing of each MSSC.

E4-18
Table 4.4-2a, High Ranked IPE Components Not in the IST Program, should identify the proposed compensatory actions (i.e., not TBD).

E4-19
There does not seem to be a one-to-one map between the completeness issues described in Section 4.2 and the subsequent sub-sections (e.g., to compensate for PRA limitations the expert panel is required to identify components with operational concerns, but this issue does not seem to have a companion sub-section). Please discuss.

E4-20
The sensitivity studies described in Section 4.2.5 do not appear to adequately explore whether components could easily change from one category to another as a function of:

a. failure rates which could be age-dependent,

b. component unavailability assumptions which tend to vary with service condition, and

c. small variations of the decision criteria [i.e., F-V and RAW thresholds].

(see PRA-15 through 22)

E4-21
Truncation (Table 4.2-1) of all valves in the containment spray system (i.e., because they are "not required for CDF and not significant for LER") may not be appropriate because it removes defense-in-depth and could affect containment failure probability and health effects. Please discuss. (see PRA-5 & 6)

E4-22
On page 4-42 it states that "Safety Chilled Water is a system that meets the qualitative definition of initiator importance but not the quantitative one. To be conservative, this system was added to the list of important initiators." This does not appear to be reflected in Table 4.2-2 and Table 4-1 (e.g., pumps appear to have a marginal to high F-V, valves are all ranked low). Is this "[b]ecause these three systems cumulatively contribute less than 6 percent to total CDF, the small change in initiating event frequency (due to the relatively small number of components affected) ensures that the cumulative effects on the CDF and LERF due to IST test interval changes [are] insignificant?"

E4-23
In the sensitivity study section, it states that the CCW, SI, and CVCS pump discharge check valves (p. 4-47) all had elevated importance for fire and large early releases and that "the sensitivity study seems to confirm a pattern of underlying importance for selected components in these systems despite the fact that they did not meet the original importance thresholds." Why is it then that the CCP and CCW pump discharge check valves are not ranked as high in Table 4-1?

E4-24
Section 4.3 states that a 66 percent increase in CDF and a 70 percent increase in LERF is "much less than any reasonable acceptance criteria for classifying something as safety neutral." The staff does not agree with the licensee that increases less than a factor of 2 are necessarily safety neutral just because these increases are within the uncertaintity bounds of the original estimate.

E4-25
The licensee states (Section 4.3, page 4-53) that the total risk may in fact decrease because high-ranked valves not in the current IST program are being considered for increased testing. The only "additional" testing identified in the licensee's exemption request were for the CST to AFW pump isolation valves and the PMP/CCP suction cross-tie valve which will be tested by having the associated pump quarterly IST and either locked valve program or 30-day TS surveillance. It appears that no additional testing (other than that currently being done) has been proposed.

E4-26
Page 4-63: Was the unmodeled valve that the expert panel moved to the high category (i.e., because it might degrade the performance of more than one pump) the RHR pump mini-flow valve? If so, Table 4-1 seems to suggest that it was modeled.

E4-27
The expert panel section (i.e., Section 4.4, page 4-65) states that:

> Evaluations were performed to determine how to use existing in-service testing techniques most effectively to address the more safety significant failure modes in the IPE. The following three questions were normally asked for these evaluations:
>
> - Does in-service testing apply to the failure modes that are risk significant?
> - What testing is currently being done?
> - Does ranking justify an improvement in testing to an IST-type testing program?
>
> For components or IST functions not modeled in the IPE, the same systematic approach was taken as for modeled components.

How was this evaluation normally conducted? Was it documented (e.g., component-by-component)? (see E4-30 and PRA-7)

E4-28
HV-4699 & HV-4700 and HV-4696 & HV-4709 were ranked LSSC and had RAW > 2; however, the expert panel proposed no compensatory actions. Why? While current IST may not check the IPE failure mode, some other test or compensatory action may be appropriate.

E4-29
The compensatory actions described by the licensee (i.e., in Tables 4.4-1, 4.4-2, and 4.4-2a) do not seem to explicitly check for degradation in valve reliability and nothing new is proposed (e.g., the valve gets cycled for some other maintenance or testing activity, or degradation/failure would be detected by an alarm). Please discuss. (see E3-5)

E4-30
Section 8, "Appendices" of the licensee's submittal states that "Comanche Peak Steam Electric Station Risk-Based In-Service Testing Expert Panel Guidance Document" will be provided later. The substance of what the expert panel considered and how they resolved issues needs to be reviewed by the staff. Please include the schedule for providing this document. (see PRA-7)

E4-31
The positive displacement charging pump is not listed on Table 4-1 along with the other charging pumps. Was the positive displacement charging pump modeled in the CPSES PRA? What was the result of the risk-ranking for this pump? What testing strategy is proposed for this pump?

E4-32
Page 4-42 states that:

> Safety Chilled Water is a system that meets the qualitative definition of initiator importance but not the quantitative one. To be conservative, this system was added to the list of important initiators.

Why are the safety chiller CSW return valves (1-PV-4552 & 1-PV-4553) ranked low?

E4-33
In the summary and conclusions (section 5), references were made to a "decrease in plant risk" and "safety neutral." Please provide a basis for these assertions or quantify the risk decrease.

VI. QUESTIONS ON ENCLOSURE 5 - IMPLEMENTATION RESULTS AND SYSTEM DRAWINGS

E5-1
DWG M1-0257: Why are boric acid transfer pumps TCX-CSAPBA-01 and 02 not ranked as being more safety significant when boric acid transfer pumps TBX-CSAPBA-01 and 02 are MSSC?

E5-2

a. Why is 1-8969A/B ranked low when 1-8924 and 1-8804 are ranked high (DWG M1-0261)?

b. Why is 1-8958 ranked low when 1-8812A/B are ranked high (DWG M1-0263 Sheet 5 of 5)?

c. Why are 1-8730A/B ranked low when 1-HCV-0606/0607 and 1-8716A/B are ranked high (DWG M1-0260)?

d. Why are 1SI-8919A/B ranked low when 1-8814A/B are ranked high (DWG M1-0263 Sheet 4 of 5)?

e. Why are valves 1-8922A/B ranked LSSC when the SI pumps and other valves in the injection flowpaths to the cold legs are ranked MSSC (DWG M1-0263 Sheet 4 of 5)?

f. Why are the high head SI pump cross-tie valves (i.e., 1-8821A/B) ranked LSSC (DWG M1-0263 Sheet 4 of 5) when the low head SI (i.e., RHR pump) cross-tie valves (i.e., 1-8716A/B) (DWG M1-0260) are ranked MSSC?

g. Why would not 1-HV-4776 and 1-HV-4777 be MSSC if the CS pumps are MSSC (DWG M1-0232 Sheet 1 of 2)? Why would 1CT-0013/0042/0065/0094 and 1CT-0142/0145 check valves in this same flow path, not also be ranked high?

h. Why are valves in the auxiliary feedwater (AFW) flowpath ranked low when the AFW pumps are ranked high (DWG M1-0206)?

i. Why are 1-8801A/B ranked low when 1-8815 is ranked high (DWG M1-0261)?

E5-3
What testing is proposed for the main steam dumps to the condenser (1-TV-2370A, B, C, D, E, F, G, H, and J) and the steam generator flow control valves (1-FCV-0510, 1-FCV-0520, 1-FCV-0530, and 1-FCV-0540)? These are valves that are not in the current IST program but were high risk in the IPE.

E5-4
What testing is proposed for the following LSSC valves?

CCW System: X-PV-3583 (DWG M1-0229 Sheet 2 of 8)
X-PV-3584 (DWG M1-0229 Sheet 2 of 8)
X-PV-3585 (DWG M1-0229 Sheet 3 of 8)
X-PV-3586 (DWG M1-0229 Sheet 3 of 8)

CVCS System: 1-8104 (DWG M1-0255 Sheet 2 of 3)
1-8105 (DWG M1-0255 Sheet 1 of 3)
1-8106 (DWG M1-0255 Sheet 1 of 3)
1-8109 (DWG M1-0255 Sheet 1 of 3)
1-8112 (DWG M1-0253 Sheet 1 of 2)
1-8145 (DWG M1-0253 Sheet 2 of 2)
1-8146 (DWG M1-0253 Sheet 2 of 2)
1-8147 (DWG M1-0253 Sheet 2 of 2)
1-8153 (DWG M1-0253 Sheet 2 of 2)
1-8154 (DWG M1-0253 Sheet 2 of 2)
1-8210A&B (DWG M1-0255 Sheet 1 of 3)
1-8202A&B (DWG M1-0255 Sheet 1 of 3)
1-FCV-0111A&B (DWG M1-0255 Sheet 2 of 3)
1-FCV-0110B (DWG M1-0255 Sheet 3 of 3)
1-HV-8220 (DWG M1-0255 Sheet 3 of 3)
1-HV-8221 (DWG M1-0255 Sheet 3 of 3)

CS System: XCS-0037 (DWG M1-0257)
XCS-0039 (DWG M1-0257)
XCS-0041 (DWG M1-0257)
XCS-0044 (DWG M1-0257)

Liquid Waste Processing System: 1WP-7176 (WP-7196?) (DWG M1-0264)
1WP-7177 (DWG M1-0264)
1-HV-7311 (DWG M1-0264)
1-HV-7312 (DWG M1-0264)

PASS System: 1-HV-4182 (DWG M1-0228)

Main Steam System: (DWG M1-0202)
1-HV-2333A
1-HV-2334A
1-HV-2335A
1-HV-2336A

1-MS-0021, 0022, 0023, 0024, 0025
1-MS-0058, 0059, 0060, 0061, 0062
1-MS-0093, 0094, 0095, 0096, 0097
1-MS-0129, 0130, 0131, 0132, 0133

Why are the main steam safety valves and main steam isolation valves LSSC for CPSES? Does the FSAR transient analysis take credit for these valves?

1-HV-2452-1
1-HV-2452-2

Why are the main steam supply valves to the auxiliary feedwater pumps LSSC for CPSES? Does the FSAR transient analysis take credit for these valves?

1-HV-2397 A&B
1-HV-2398 A&B
1-HV-2399 A&B
1-HV-2400 A&B

E5-5
What testing is proposed for the following LSSC pumps?

- Spent fuel pool cooling water pumps CPX-SFAPSF-[illegible] -02 (DWG M1-0235 Sheet 1 of 2)
- Safeguards Building sump pumps CP1-WPAPSS-01/-0[illegible] 03/-04 (DWG M1-0236)

E5-6
Why are 1-8825 and 8890A/B Appendix J leak rate tested per technical specifications whereas 1-8881, 1-8823, and 1-8824 are not?

E5-7
In the CVCS system (DWG M1-0253 Sheet 2 of 2), is 1CS-8393 (spring-loaded check valve) in the CPSES IST program? If not, why not?

E5-8
Valve I-8924 (Unit 1 SIP/CCP suction header cross tie isolation valve) (DWG M1-0261) is ranked as an MSSC but the implementation results treat it as an LSSC. Why?

E5-9
Are there any plans to perform partial-stroke testing of any check valves classified as LSSCs during the deferred testing period? Are other test methods, consistent with OM-22, being considered? (see G-3)

E5-10
If the exemption is implemented and testing of solenoid valves differed, would any of these valves be left in the energized position for the entire interval between tests? Is the licensee considering any more frequent exercising of solenoid valves that are not exercised during their deferred test interval? Please comment. (Note NUREG-1275, "Operating Experience Feedback Report - Solenoid-Operated Valve Problems.")

VII. QUESTIONS ON THE USE OF PRA TO RISK-RANK COMPONENTS FOR IST

A. PRA Quality and Scope

The NRC position on PRA quality as articulated in a Staff Requirements Memorandum (SRM) dated April 28, 1995, is that IPE reviews are not of sufficient depth to allow the staff to indicate approval of, or concurrence with, the absolute values and conclusions. The Commission suggested that if there is to be further use of PRAs as a basis for risk-informed regulatory changes, then the industry should, in coordination with the staff, initiate the actions necessary to develop PRAs that are acceptable for regulatory use (i.e., standardized methods, assumptions, level of detail).

Section 3.7 (page 3-11) of Enclosure 3 states that "the CPSES IPE meets or exceeds the quality standards subsequently suggested by the EPRI PSA Applications Guide." While the staff believes that the EPRI guide provides high level criteria to ensure that PRAs will meet some minimum quality standard, it does not supply sufficient details to show that PRAs are adequate for risk-informed regulation such as the extension of IST intervals. A more detailed review process is required. Please provide additional information as identified below.

PRA-1
Page 3-4 of Enclosure 4 discusses the review and QA process that the IPE has experienced including internal and external reviews. Please make review documentation available for review during a site visit. The staff needs to see what the review scope and process consisted of, the review findings and the resolution to these findings. (In particular, the staff needs to see if the following were addressed: consistency with analyses for similar plants; completeness in terms of systems/components modeled, HEPs modeled, IEs modeled; accuracy; realism - generic or plant specific data, modeling of as-built, as-operated plant, assumptions; and reproducibility.) (See E3-9)

PRA-2
Potential areas of concern developed from the IPE submittal that may impact IST issues:

a. Inter-unit cross ties are modeled in the IPE. What is the current operational status of inter-unit cross ties at CPSES? When one unit is in shutdown, are systems depended upon from the other (i.e., operating) unit? Are the cross-tie systems ranked high? Are cross-tie valves ranked high? If not, please justify their omission.

b. The IPE states that post initiator human actions "may or may not be covered by procedures." What SSCs are affected by HEPs that are based on non-proceduralized recovery actions? How was SSC importance adjusted to account for greater uncertainty associated with non-procedural recovery actions?

c. The CPSES IPE relies mostly on generic data. The Expert Panel has re-ranked components higher for IST based on plant operating experience. Are there procedures to systematically collect plant specific data for IST ranking to ensure that SSC ranking is not invalidated by new data? (i.e., please discuss how your plant PRA model will be updated to reflect operating experience)

PRA-3

PRA models were not used for the ranking of SSCs for containment isolation, interfacing LOCAs, seismic events, and outage operations. Therefore, ranking for these events is somewhat inconsistent with that for the internal events. Ranking within each type of initiating event without considering the overall CDF or LERF is inconsistent. Please justify your approach or provide a revised assessment.

PRA-4

In terms of truncation limits used, page 4-36 of Enclosure 4 of the submittal stated that the IPE contains all cutsets above 1E-9. Some cutsets between 1E-8 and 1E-9 were recovered, the others were not. So that recovery actions are uniformly applied, only cutsets above a 1E-8 truncation limit were used in the IST submittal. By reviewing these cutsets and comparing those components that were ranked low but were just below the cutoff in the 1E-8 model with the basic events in the 1E-9 list, CPSES concluded that changing truncation limit from 1E-8 to 1E-9 will not change the ranking of the IST components. The staff has the following concerns regarding the approach. Please justify the adequacy of your approach with respect to the following:

a. The CPSES study of truncation limits consisted of a review of a list of events in the 1E-8 cutset equation versus the 1E-9 cutset equation. The staff concern here is that even though a component is not be to truncated, there may not be enough cutsets to fully represent the component. Therefore, F-V importances could be underestimated if there are many relevant cutsets that are truncated. (For example, with the IPE CDF at 5E-5, a truncation limit of 1E-8 and a F-V criteria of 1E-3, the truncation of as few as 5 cutsets could result in a component being ranked low as opposed to high.)

b. Preliminary sensitivity studies for other plants show that (with CDFs of around 1E-5), truncation limits on the order of 1E-11 or lower are needed to obtain "stable" results in terms of component ranking. These studies show that, because less than 20 percent of the cutsets are kept when truncation limits are increased by factors of ten (e.g., 1E-9 to 1E-8 or 1E-10 to 1E-9), there is usually an insufficient amount of cutsets/sequences at the 1E-8 truncation level to produce robust ranking results. Therefore, to show that CPSES results are not affected by truncation limits, sensitivity studies should be provided to show the CDF and the ranking order of components at truncation levels of 1E-10 and 1E-11. These studies should also show the sensitivity of results to the choice of the specific numerical criteria chosen for component classification (e.g., F-V > 1E-3).

c. Based on a review of the tabulated results (Table 4.1-1 of Enclosure 4), there are 27 components that have F-V of 0.0 and 6 components that have a F-V of 1E-4. Supposedly, these events were modeled in the IPE and appeared in some core damage cutsets. Otherwise, they should have been assigned "n/a" under the F-V column. This needs to be clarified, because any event that appears in any core damage cutset should have a F-V of at least 1.75E-4 (with a total CDF of 5.7E-5 and a truncation value of 1E-8, the F-V of a cutset with frequency of 1E-8 should be 1.0E-8/5.7E-5 = 1.75E-4). It should be noted that considerations such as this could provide a basis for the determination of the truncation limit needed based on total CDF and risk ranking criteria.

Based on the above, please justify why a lower truncation limit should not be utilized for ranking SSCs.

B. Deterministic Considerations

The staff believes that a criteria should be added to the ranking process so that the defense-in-depth concept is not jeopardized by the reduction in IST frequency. The numerical importances for some systems/components are low because of diversity and redundancy. However, changing the IST requirements for one system can influence the risk importance of other systems performing the same function. Therefore, in the absence of more detailed evaluations, redundant means should exist for performing critical safety functions with components that are ranked high.

PRA-5
Maintaining defense-in-depth is mentioned in several places in the submittal, for example in the first paragraph of page 4 of Enclosure 1. However, we do not see evidence of how this is applied. Please provide details of how you met this objective.

PRA-6
A useful way to consider defense-in-depth is to study path sets (combinations of success paths) to determine if at least one success path contains SSCs that are all ranked high. This approach, or other alternative methods, should be used to demonstrate that defense-in-depth is maintained.

C. Expert Panel

PRA-7
The main objective of the expert panel (EP) was to ensure that the risk ranking is consistent with plant design and operating experience. The EP also reviewed rankings and their associated technical basis for IPEEE, outage risk, and LERF (including ISLOCA scenarios and containment isolation valves). For those SSCs not modeled in the IPE, the EP ranked them based on insights from other work.

a. Appendix A to Enclosure 4 is intended to document the Expert Panel Guidance document. This was not made available in the submittal. (Also, the top of page 3-9 of Enclosure 3 references a "Section 4" for the expert panel process. This appears to be an incorrect reference.) The staff will need to review the EP guidance document to verify that the EP process is well defined, systematic, scrutable, and reproducible.

b. If not already included in the EP guidance document, please define the process used to integrate PRA insights with deterministic considerations.

c. Again, if not already included in the EP guidance document, please clarify the following statements from page 4-64 of Enclosure 4:

- "determine, if practical that whether or not mitigating operator actions were included in the IPE." What does the EP do with this information?

- "validate or change the IPE-based ranking, as appropriate." Please describe the validation process and the rationale for changes.

PRA-8
When component ranking is modified by the expert panel, the EP should investigate the reason why the PRA results are not correct and whether or not the PRA needs to be modified. When the EP raises a ranking, this could imply that plant specific data or operating practices show a component to be important and should therefore be included in the PRA. When the EP lowers a rank, this could mean that PRA assumptions (input, etc.) are incorrect and/or conservative. This latter case could cause a masking effect on the other plant components. Please describe how these concerns were addressed.

D. SSC Ranking

PRA-9
When ranking for fires and tornados using IPEEE models (page 4-11 of Enclosure 4), what were the importance criteria used? What was the truncation value used for cutset equation and how many cutsets were in the concatenated equation? What was the CDF from fires and tornadoes and what percent was represented in the concatenated cutset equation?

PRA-10
Seismic ranking: The CPSES IPEEE chose the reduced scope seismic margin evaluation to evaluate seismic vulnerabilities, therefore, no PRA models were available to determine seismic risk. The IST component ranking for seismic is based on qualitative arguments (pp. 4-12 through 4-15 of Enclosure 4). In the qualitative assessment, a LOSP and very small break LOCA, and main steam line break were assumed as initiators. The evaluation does not assume that anything else is failed by the earthquake. A comparison of initiator frequencies with those from the IPE and using the IPE CCDPs, the submittal summarized that seismic risk was not significant. Therefore, no components were added to the high category by the expert panel as a result of seismic

considerations. In making these judgements, does the expert panel contain members that are familiar with the seismic qualification of plant SSCs, or are all insights from the above evaluation provided by the PRA/IPEEE engineer?

PRA-11

Outage risk ranking: A qualitative assessment was done to determine the effect of shutdown modes on component ranking since CPSES does not currently have a shutdown PRA. The following are staff comments on this process:

a. The second paragraph on page 4-17 of Enclosure 4 states that "[o]utage risk evaluations indicate that the outage risk is lower than at power risk. Therefore, there should be no time period of increased risk that would cause an unimportant component at power to be important during an outage if the component performs the same function." Based on this, the CPSES approach to risk ranking for outage configurations assumes that "if a component performs the same function and is in the same initial state as at power, the at power ranking is assumed to bound the outage ranking." The staff agrees that the CDF during an outage is usually (but not always) lower than the at power risk; however, even with a lower CDF, the risk from shutdown operations could be high when compared to those at full power. For example, NUREG/CR-6144 Vol. 6 Part 1, shows that latent cancer risk from mid-loop operations alone (at Surry) is very similar to the risk for all operations at full power. The reason for this is that the containment is likely to be unisolated for a significant fraction of the accidents; therefore, the release to the environment is potentially large. Thus, using CDF alone in this case is not a good measure of risk. Note: A qualitative argument is presented on page 4-19 under "Containment Integrity" to state that the "causes of large early release for shutdown are bounded by the IPE." This argument depends on operator actions to isolate the containment. NUREG/CR-6144 shows that the HEP for this case is large and the HEP is the dominant cause of the large offsite dose risk. Please address these shutdown issues and re-rank the SSCs as necessary.

b. In addition to the above, during an outage, there is a greater likelihood that the redundant train of a system is not available because of maintenance, etc. Therefore, the importance ranking for full power operations might differ from that for outage operations even if the system function is the same. Please address.

c. Although there is no direct one-to-one correlation between the CPSES shutdown categories 1, 2 and 3 components to the high, medium, and low components, the rules used for risk ranking for shutdown (pp. 4-18 and 4-19 of Enclosure 4) appear reasonable when comments from (a) and (b) are taken into account. The staff has some concerns that some components that might be placed in category 2 might belong in category 1 if a more rigorous analysis was performed (for example, the check valves for which reverse flow can fail redundant trains); however, since CPSES

is treating both categories 1 and 2 as being "high," this point is currently not relevant. Is there a possibility of shutdown category 2 components being ranked as low risk significant in the future? If not, what is the advantage of having three categories?

PRA-12

Issues related to containment performance: Please address the following.

a. For LERF, please provide the CPSES definition for "Large" and "Early." When referring to the IPE submittal, are all the unisolated and bypass release categories (i.e., V sequence, SGTR and ISGTR, and isolation failures) as well as release categories I and III defined as large early releases? If not, please explain why not.

b. A sentence at the top of page 4-25 states that "... compensatory actions were required for large releases that were not classified as early ..." The staff agrees with the fact that all large releases have to be addressed, since many Level III studies have shown that population dose and latent cancer fatality risks can be dominated by late releases.

   - Does this then include IPE release categories V, VII, and IX?
   - What components were re-ranked as high because of this definition?
   - What are the compensatory actions?

c. Containment spray system components (with the exception of the spray pumps) are ranked low because they are not risk significant in terms of LERF (Table 4.2-1). How significant of a role does containment spray play in long term containment heat removal and in condensation of steam buildup from CCI, i.e., are containment sprays important in terms of all large releases? Again, referring to the IPE, can the operation of containment spray result in the shifting of core damage sequences from the "rupture" to "leakage" categories (i.e., from the large to small release categories) or from the "early" to "late" categories?

d. Concerning SGTR isolation (page 4-27 of Enc. 4), the expert panel ranked as low many steam line isolation valves because of operator actions specified in EOPs that can isolate the leak path. Are the valves specified in the EOPs for isolation purposes ranked high? How much time is available for isolation? What is the HEP?

e. The submittal does not provide enough details on how components were ranked for i) ISLOCA, and ii) safety systems uniquely important to preventing high pressure core melt scenarios. Please provide additional details. Also, in terms of ISLOCA, how will the ISLOCA initiating event frequency be affected with the proposed extended frequencies for low ranked valves?

3. Questions on the ranking results: Table 4-1 of Enclosure 3:

a. Questions on Table 4-1 of Enclosure 3:

- What is the basis used by the expert panel when they decreased the ranking for the EDG fuel oil transfer pumps to low (FV=0.05, RAW=140)?

- Why is there "no change" for the Containment Spray pumps and its associated components when LERF is considered?

b. Questions on AFW system ranking:

- The turbine-driven pump (TDP) is ranked high. A single failure of the steam supply valve 1-HV-2452 will fail the TDP. Why isn't this valve also ranked high? Similarly, why aren't valves 1-HV-2452-1 and 1-HV-2452-2 ranked high?

- Each of the three AFW pumps can feed each of the four SGs via several redundant paths. Presumably, because of this redundancy, none of the valves in the AFW pump - SG flow path were ranked high. Was there any consideration given to rank some valves as high to assure at least one success path? Also, was there consideration given that the CCF of the valves could increase given increased IST frequency?

c. RHR system: It appears that valves 1-8890A and 1-8890B could result in a flow diversion that could fail system function (somewhat similar to that caused by valve 1-8717). Valve 1-8717 is ranked high, while the other two are ranked low. Why is this the case?

d. Questions on CVCS ranking:

- Valves 1-LCV-112B, 1-LCV-112C, and 1-8440 are in series. The first two are ranked high, while the last is ranked low. Why is this the case?

- Is there a redundant path for emergency boration other than through the low ranked valve 1-8104?

e. FW system: What is the basis for the expert panel in ranking valves 1-HV-2134/2135/2136/2137 high when there are many other low ranked valves in the system which might also fail and cause a loss of feedwater transient?

E. Risk Metrics and Numerical Decision Criteria

PRA-14
Define LERF. Discuss how this is adequate to cover latent health risks (i.e., cancer) for CPSES.

PRA-15
A comparison of the CPSES decision criteria to trial criteria being considered by the staff is as follows:

Final Comanche Peak IST Criteria				
	FV < 0.001	FV ≥ 0.001	FV ≥ 0.005	FV ≥ 0.01
RAW ≥ 10	L*	H	H	H
RAW ≥ 5	L*	H	H	H
RAW ≥ 2	L*	H	H	H
RAW < 2	L	H	H	H

* Low with compensatory measures

Staff Trial Criteria				
	FV < 0.001	FV ≥ 0.001	FV ≥ 0.005	FV ≥ 0.01
RAW ≥ 10	H	H	H	H
RAW ≥ 5	M	H	H	H
RAW ≥ 2	M	H	H	H
RAW < 2	L	M	H	H

The above trial criteria are based on (i) the staff's belief that the components with RAW > 10 should be ranked high regardless of the F-V value; and (ii) a F-V > 0.001 would result in ranking results that are more stable when truncation levels in the range of 1E-9 or 1E-10 are used.

As can be seen from the tables above, the final CPSES criteria (i.e., treating all medium ranked valves as high) are very similar to the trial NRC criteria (if we assume that the NRC "medium" is equivalent to the CPSES "low with compensatory measures"). The only difference is in SSCs with F-V < 0.001 but RAW > 10. If we adopt the NRC criteria, the following four CPSES components will have to be added to the "high" category: 1-HV-4699, 1-HV-4700, 1CC-0061, and 1CC-0031 (by symmetry). Please justify the CPSES criteria, or justify why the above four valves should be ranked low.

F. Sensitivity Studies (see E4-20 & 25)

PRA-16
Effect of initiating events on ranking: The submittal (Section 4.2.5) identified the component cooling water system, service water system, and safety chilled water system as being potentially important systems (with

respect to IST) that contribute to both core damage mitigation and initiating event frequency. Fault trees were used to determine the initiating event frequency. The submittal then stated that the components that are important to core damage mitigation are also the same ones that are important as trip initiators. There was no requantification of the model with the initiators represented by fault trees (single basic events were used to represent the initiating events). In order to better understand the CPSES conclusion, please provide the staff with the fault tree models for each of these systems, both as initiating events and as core damage mitigating systems.

PRA-17

As a follow-up question, how has the loss of MFW initiating event (which is a 8.8% contributor to CDF according to the IPE) been considered?

PRA-18

Effect of common cause failures (CCFs): In the IPE, the Multiple Greek Letter (MGL) parameters applied in the CCF analysis were obtained by the Bayesian updating technique: generic CCF data had been screened to determine Comanche Peak specific "prior parameter distributions" which were then updated with CCF events ("evidences") experienced at the plant. The process resulted in proper "posterior" MGL parameters. In the absence of plant specific events, the posterior MGL parameters are "prior dominated," i.e., strongly biased (usually downward) by the screening process. (The process seems to allow neglect of CCF events that have not yet occurred at the plant or were not identified.) The staff has concerns that the increase in IST frequencies might influence plant specific CCF events and therefore the IPE estimates of CCF probabilities.

For those components for which CCF contributions are not included in the PRA models and this exclusion is justified based on the historical and engineering evidence driven by current requirements, there would be no assurance that the CCF contribution will not become significant under the proposed exemption request. Therefore, sensitivity studies could identify those components which can shift to a high category as a result of uncertainties in CCF rates.

In discussing the results of the CCF sensitivity study, the IST exemption submittal included the effects on components where CCFs were already modeled. Did the importance of components where CCF was not modeled increase as a result of the removal of CCFs from all components? (i.e., did CCFs mask the importances of components that are not originally modeled with CCFs?) Also, were there components that were ranked low because CCF was not included in the PRA model. If so, the CCF models should be revisited to provide reasonable assurance that the assumption of no CCF is still valid with extended IST frequencies.

PRA-19

Effect of recovery actions (component importance due to human errors): The concern in this area stems from situations where very high success probabilities are assigned to recovery actions in sequences, therefore resulting in related components being risk insignificant. Furthermore, it is not desirable that the ranking of SSCs be significantly impacted by recovery

actions which are only modeled for limited scenarios. Therefore, SSCs should be re-ranked without recovery actions. The CPSES submittal indicated that risk ranking was not affected by the removal of recovery actions. Similar to a question raised earlier on the "quality" of the PRA, can you please discuss the effect of non-proceduralized recovery actions on ranking? Please also provide a list of SSCs that are affected by non-proceduralized HEPs; the HEPs used, and a justification for the HEPs.

PRA-20
Multiple component importance: In risk ranking, the SSCs are binned based on single event importances. For those components assigned in the low category, one needs to have reasonable assurance that the aggregate impact of multiple components is negligible. The multiple component importance measure should identify which combination of SSCs might be risk significant, therefore requiring them to be shifted to a higher category.

The CPSES submittal calculated the RAW of components taken two at a time, and identified two components that had low RAW individually and high RAW when combined with other events. These 2 components were ranked as if their individual RAW was high. F-V rankings were not affected.

a. In general, multiple component cutsets (containing three or more events) are lower in frequency. Therefore, it would be reasonable to expect more multiple component combinations when using lower truncation values. When comparing the 1E-9 cutset list to the 1E-8 list for CPSES, how many more multiple component cutsets (ranked low) are identified? (i.e., does the 1E-8 equation contain sufficient combinations to this study to be effective?) (See PRA-4)

b. How did the submittal treat super-components that might contain low ranked components in their search for low ranked SSC combinations?

PRA-21
Ranking from dynamic plant configurations: The submittal did not evaluate the effects of the different plant configurations on component ranking. The areas where this might be important are periods where there are scheduled maintenance or rolling maintenance when pre-specified sets of components are brought down for maintenance for a pre-specified amount of time. This issue should be addressed.

PRA-22
PRA Uncertainty: One of the ways to check for uncertainty effects is to identify the major uncertainties in the PRA and to evaluate the effects on the risk importance. The evaluations can be qualitative or quantitative.. The PRA modeling effects on risk importance evaluations can be evaluated by using sensitivity calculations (as was done by CPSES for issues like CCF, recovery factors, initiating events, etc.). The effects of PRA data uncertainties can be evaluated by carrying out uncertainty propagation for selected risk

importance values. An importance analysis using the fifth and ninety fifth percentile of the unavailability distributions could be performed to determine the range of variations in F-V measures. Ranking of some components with large uncertainties (such as check valves) could vary and these component should be ranked in the higher category to account for the uncertainty distribution.

G. Verification and Validation Cases

PRA-23

A calculation was performed to determine the increase in CDF due to the increase in failure probabilities of LSSCs. Two cases were considered: one assumes that compensatory measures (assumed to be as effective as the IST program) were applied to LSSCs with high RAW values, and the other assuming no compensatory measures. In the first case, CDF increased by 75%, given a factor of 100 increase in the failure probabilities of LSSCs. In the second case, the increase is 25%.

a. The above results appear to be an underestimation of the risk impact from all components in the low or non risk category, as compared with a simple lower-bound estimate of the increase in CDF using the component F-V importance. There are approximately 50 IPE components in the low risk category. They have a total F-V of approximately 1.67E-2, obtained by simply summing the F-Vs of the components. Summation is done based on the assumption that these components do not appear in the same core damage cutset. This assumption leads to a lower bound estimate of the resulting increase in CDF, because if the components appear in the same cutset, the increase in CDF would be higher. Considering the case that the failure probabilities of the low risk components

PRA-24

In the sensitivity study, the test interval was varied, however, the failure rate was left constant. Given the fact that the study increased test intervals by factors of up to a hundred, it is very hard to postulate that the failure rate would stay constant. [Data that is available is based on the current test intervals, i.e. 3 months, 1 year, or maybe 18 months. Therefore, to apply the current failure rates for test intervals that increase by factors of up to 100 does not appear appropriate]. The staff does not have confidence that constant failure rates would be valid for the test intervals proposed in the submittal. It would be logical to assume that after a certain time period the effects of aging, corrosion, material deposition, etc., will result in an increase in component failure rates.

Finally, the submittal pointed out that the risk increase starts to become non-linear when component unavailabilities are increased by factors of 40 or more. With the proposed IST frequency increase from 3 months to 6 years for many components, the increase in the failure rate is assumed to be 24 (6 x 12 / 3 = 24). Therefore, even if you are off by a factor of two in your assumption of failure rates because of lambda being non-linear, (i.e., if failure rates for IST frequency increase from 3 months to 6 years is 48 instead of 24), we are into the non-linear zone for risk increases.

Keeping the above discussion in mind, please justify the ssumption on linear failure rates, and your proposed test interval.

PRA-25
Since ranking was done within each PRA model and does not account directly for IPEEE and shutdown risk, the calculated V&V increase is only based on internal events results. How will the V&V results and conclusions be affected if external events and shutdown risk were included?

PRA-26
Does the V&V include the increase in initiating event frequencies from the loss of the CCW, SWS and SCWS support systems? Increased unavailabilities from components ranked as LSSC in these systems could affect the initiating event frequencies.

ENCLOSURE

PALO VERDE NUCLEAR GENERATING STATION

ACRONYM/ABBREVIATION DEFINITION SHEET
AND
10 CFR 50.59 ANNUAL REPORT
FOR 1995

ACRONYM/ABBREVIATION DEFINITION

ACRONYM	DESCRIPTION	ACRONYM	DESCRIPTION	ACRONYM	DESCRIPTION
AC	Alternate Alternating Current	ED	Feedwater Heater Extraction	NSS	Nuclear Sampling System
ACI	Auto-Closure Interlock	EDC	Equipment Document Change	SIS	Safety Injection System
[illegible]	Essential Air Cooling Units	EER	Engineering Evaluation Request	ODCM	Offsite Dose Calculation Manual
ADV	Atmospheric Dump Valve	EGM	Electric Governor-Magnetic	ODCR	Outgoing Document Change Request
AF	Auxiliary Feedwater	EMDFT	Emergency Defeat	PASS	Post Accident Sampling System
AFAS	Auxiliary Feedwater Actuation System	EQ	Equipment Qualification	PC	Fuel Pool Cooling
ANI	American Nuclear Insurers	ERFDADS	Emergency Response Facilities Data Acquisition Display System	PCR	Position Change Request
ATWS	Anticipated Transient Without Scram	ESF	Emergency Safety Features	PMS	Plant Monitoring System
BAC	Boric Acid Concentrator	ESFAS	Engineered Safety Feature Actuation Sys	PPS	Plant Protection System
BAMP	Boric Acid Makeup Pump	ESPS	Essential Spray Pond System	PRM	Process Radiation Monitor
BFT	Blowdown Flash Tank	ETA	Ethanolamine Test	PSV	Primary Safety Valve
BWNS	Babcock & Wilcox Nuclear Services	EW	Essential Cooling Water System	PWSCC	Primary Water Stress Corrosion Cracking
CD	Condensate System	FBVAS	Fuel Building Ventilation Actuation System	QSPDS	Qualified Safety Parameter Display System
CEA	Control Element Assembly	FW	Feedwater	RAR	Reload Analysis Report
CEDM	Control Element Drive Mechanism	FWCS	Feedwater Control System	RCA	Reactor Coolant Accident
CEOG	Combustion Engineering Owners Group	GA	Gas Service System	RCS	Reactor Coolant System
CH	Charging System	GTG	Gas Turbine Generator	RPS	Reactor Protection System
CIAS	Containment Isolation Actuation Signal	HASRT	High Activity Spent Resin Tank	RVLMS	Reactor Vessel Monitoring System
[illegible]	Core Operating Limit Supervisory System	HDPE	High Density Polyethylene	RWLMS	Reactor Water Level Monitoring System
CPVC	Cross-Linked Polyvinyl Chloride	HELB	High Energy Line Break	RWT	Reactor Water Tank
CRDR	Condition Reporting Disposition Request	HF	Fuel Building HVAC	SABD	Safety Analysis Basis Document
CSAS	Containment Spray Actuation System	HJTC	Heater Suction Thermal Couple	SARCN	Safety Analysis Report Change Notice
CST	Condensate Storage Tank	HLSA	High Level Storage Area	SBCV	Steam Bypass Control Valve
CT	Condensate Transfer System	LOP	Loss of Offsite Power	SCAT	Spray Chemical Addition Tank
CVC	Chemical Volume Control	HVAC	Heating, Ventilation, Air Conditioning	SPCR	Setpoint Change Request
CW	Circulating Water System	LOCA	Loss of Coolant Accident	SC	Secondary Chemical Control
DAFAS	Diverse Auxiliary Feedwater Actuation Sys	LPMS	Loose Parts Monitoring System	SCC	Stress Corrosion Cracking
DAWPS	Dry Active Waste Processing Storage Facility	LRS	Liquid Radwaste System	SDCHX	Shutdown Cooling Heat Exchanger
DCP	Design Change Package	MCB	Main Control Board	SDCS	Shutdown Cooling System
DFWO	Deficiency Work Order	MCC	Motor Control Center	SDR	Supplier Document Register
DG	Diesel Generator	MEE	Material Evaluation Report	SESS	Safety Equipment Status System
DS	Domestic Water System	MHA	Maximum Hypothetical Accident	SG	Steam Generator
DVM	Digital Voltmeter	MNCR	Material Non-conformance Report	SGTR	Steam Generator Tube Rupture
DW	Demineralizer Water	MOV	Motor Operated Valve	SI	Containment Spray System
[illegible]	Essential Chilled Water System	MST	Multi-Stud Tensioner	SIAS	Safety Injection Actuation Signal
[illegible]	Emergency Core Cooling System	NC	Nuclear Cooling	SMOD	Site Modification
ECE	Equipment Change Evaluation	NES	Nuclear Engineering Services	SIMSCN	Station Infor Mgmt. Sys Change Notice
ECT	Eddy Current Testing	NQR	Non-Quality Related	SPDS	Safety Parameter Display System

ACRONYM	DESCRIPTION	ACRONYM	DESCRIPTION	ACRONYM	DESCRIPTION
SP	Spray Pond				
TAV	Temporary Absorber Vessel				
[illegible]	Temperature Indicator				
[illegible]	Total Indicated Runout				
TLU	Total Loop Uncertainty				
TMOD	Temporary Modification				
VDP	Vendor Document Procedure				
VOC	Volatile Organic Compounds				
WO	Work Order				

DOC TYPE	DOC NUMBER	DESCRIPTION	SUMMARY
CLEARANCE	1-92-01796	This clearance de-energizes Normal Fuel building HVAC duct heaters A and B to prevent sporadic tripping. This clearance does not affect the Fuel Building Essential HVAC system.	This does not introduce an unreviewed safety question. This clearance does not involve a test or experiment, and does not require a change to the Technical Specifications. The clearance does not increase the probability or consequences of an accident nor increase the probability or consequences of a malfunction of equipment important to safety. No new accidents or malfunctions have been created and the margin of safety, identified in the Technical Specifications Basis, has not been reduced. There is no safety design basis for the FB Normal HVAC system and no credit is taken for this system.
CLEARANCE	1-93-02675	This clearance evaluates the clearance on the Unit 1 LRS Concentrate Monitor Pump effective for >60 days. The clearance installed a yellow caution tag on 12/11/93 on the LRS Concentrate Monitor Pump control handswitch. The low-low level transmitter on the LRS Concentrate Monitor Tank does not auto stop the Concentrate Monitor Pump (Work Orders 659260 and 672678 have been initiated).	This does not introduce an unreviewed safety question. The deficient equipment condition of the Concentrate Monitor Tank low level trip of the Concentrate Monitor Pump has no impact to the increased probability of failure of the RWT event. The Concentrate Monitor Subsystem of the LRS is not used to mitigate the failure of the RWT. The margin of safety as defined in the basis of TSs will not be reduced.
CLEARANCE	1-94-00665	This clearance isolates Main Steam Isolation Valve 181's up stream Steam Trap 1PSGNM04. The redundant Steam Trap, M05, remains in-service. Procedure 41OP-1SG01 provides direction for this condition.	This does not introduce an unreviewed safety question. This clearance does not involve a test or experiment, and does not require a change to the Technical Specifications. The clearance does not increase the probability or consequences of an accident nor increase the probability or consequences of a malfunction of equipment important to safety. No new accidents or malfunctions have been created and the margin of safety, identified in the Technical Specifications Basis, has not been reduced.

DOC TYPE	DOC NUMBER	DESCRIPTION	SUMMARY
CLEARANCE	2-92-01349	This clearance isolated the supply breakers, motor space heaters, and handswitches for the Circulating Water (CW) Screen Wash Sump Pumps to allow inspection, cleaning, and rework of the impeller to prevent rubbing of the housing.	This does not introduce an unreviewed safety question. This clearance does not involve a test or experiment, and does not require a change to the Technical Specifications. The clearance does not increase the probability or consequences of an accident nor increase the probability or consequences of a malfunction of equipment important to safety. No new accidents or malfunctions have been created and the margin of safety, identified in the Technical Specifications Basis, has not been reduced. The CW system is not addressed in the Technical Specifications. The loss of CW is considered in the Loss of Condenser Vacuum accident analysis, but the screen wash pumps have no roll in initiation or mitigation of the event.
CLEARANCE	3-94-02074	This clearance tags-out (disconnects) spare battery charger and spare battery cells. The spare cells were removed and used in Unit 2.	This does not introduce an unreviewed safety question. This change does not involve a test or experiment, and does not require a change to the Technical Specifications. The change does not increase the probability or consequences of an accident nor increase the probability or consequences of a malfunction of equipment important to safety. No new accidents or malfunctions have been created and the margin of safety, identified in the Technical Specifications Basis, has not been reduced. No credit is taken for the spare charger or battery cells.
CLEARANCE	3-94-1803	This clearance maintains normally closed valve V0152 OPEN and allows leakage from Pressure Instrument 0550 to vent to the Volume Control Tank verses the Equipment Drain Tank via relief valve V0109. This prevents the potential for airborne activity and the continuous cycling of the relief valve. This change is associated with the Nuclear Sampling System.	This does not introduce an unreviewed safety question. This clearance does not involve a test or experiment, and does not require a change to the Technical Specifications. The clearance does not increase the probability or consequences of an accident nor increase the probability or consequences of a malfunction of equipment important to safety. No new accidents or malfunctions have been created and the margin of safety, identified in the Technical Specifications Basis, has not been reduced. The position of V0109 has no impact on the initiation or course of any accidents evaluated in the UFSAR and has no impact on the ability to isolate containment.
COLR	U2C6	This 50.59 allows changing the U2 Core Operating Limits Report based on the U2C6 reload analysis. Most notably, reestablishing a LOCA limit of 13.5 kw/ft heat rate. This had been reduced to 13.2 kw/ft in the previous cycle.	This does not introduce an unreviewed safety question. This change does not involve a test or experiment, and does not require a change to the Technical Specifications. The change does not increase the probability or consequences of an accident nor increase the probability or consequences of a malfunction of equipment important to safety. No new accidents or malfunctions have been created and the margin of safety, identified in the Technical Specifications Basis, has not been reduced. The results from the LOCA analysis with the restored LOCA limit support the consequences that have been previously reported in the UFSAR.

DOC TYPE	NUMBER	DESCRIPTION	SUMMARY
COLSS		This Study impacts the main steam quality on COLSS Secondary Calorimetric Power Error. This will change the steam moisture carryover value to reflect the measured value. Recent carryover testing identified that the current value of 0.25% was incorrect and that a value of 0.4% was more representative.	This does not introduce an unreviewed safety question. No changes to TSs are required. Since the difference in these values is within the current uncertainty of 2%, the Secondary Calorimetric Power Error remains bounded by the original calculation. The margin of safety as defined in the basis of TSs will not be reduced.
CRDR	250148	This CRDR evaluates the continued operation of non-radioactive systems after they become contaminated.	This does not introduce an unreviewed safety question. This does not require a change to the Technical Specifications. Since the total fission gas activity that could be released is 0.19 Ci (a small fraction of the 65,000 Ci analyzed in the UFSAR), there is no increase in the consequences of any accident previously evaluated. No new accidents or malfunctions are created. The margin of safety as defined in the basis of Technical Specifications will not be reduced.
CRDR	930537	This CRDR allows deviation to 10CFR50, Appendix R Emergency Lighting, to credit use of a portable hand-held lantern for equipment component label verification for actions required at the NC pump breakers during a control room fire.	This does not introduce an unreviewed safety question. This change does not involve a test or experiment, and does not require a change to the Technical Specifications. The change does not increase the probability or consequences of an accident nor increase the probability or consequences of a malfunction of equipment important to safety. No new accidents or malfunctions have been created and the margin of safety, identified in the Technical Specifications Basis, has not been reduced. Eight hour emergency lighting is installed for access/egress and breaker operation for the reactor coolant, condensate, and heater drain pumps. Actions to be taken at the Nuclear Cooling pump breaker requires access into the cabinet. Two operators are used to establish confidence in task completion.
CRDR	940087	This CRDR addressed the EW Pump and Motor Doweling status. This CRDR evaluation recommended using two dowel pins in the pump and motor feet. The dowel pins are to be installed diagonally in the pump and motor feet. The use of dowel pins will make the support feet mounting of the pumps and motors more rigid and stronger.	This does not introduce an unreviewed safety question. No changes to TSs are required. Malfunction of the ECWS pumps and motors from installing support feet dowel pins is highly unlikely. The dowel pins meet the ASTM material specs and are stronger and more rigid, therefore, operating the ECWS system with the dowel pins installed will not increase the probability of equipment malfunction. The margin of safety as defined in the basis of TSs will not be reduced.

DOC TYPE	DOC NUMBER	DESCRIPTION	SUMMARY
CRDR	940198	This CRDR reviews the permanent replacement of the Chemical and Radiological Analysis Computer System (CRACS) with MESOREM jr.	This does not introduce an unreviewed safety question. This change does not involve a test or experiment, and does not require a change to the Technical Specifications. The change does not increase the probability or consequences of an accident nor increase the probability or consequences of a malfunction of equipment important to safety. No new accidents or malfunctions have been created and the margin of safety, identified in the Technical Specifications Basis, has not been reduced.
CRDR/EER	940612	This CRDR changes the inplace testing bypass leakage of the carbon absorber filter system from 0.05% to 1.0% with a system efficiency of 70% (for normal HVAC only). The normal HVAC systems affected are AR, CP, and HA. These changes are document changes only - there is no equipment modification.	This does not introduce an unreviewed safety question. No changes to TSs are required. This system has no safety design bases since it does not impact plant mitigation during an accident event. Therefore, the consequences of an accident previously evaluated will not be increased. This system does not interface with equipment ITS. The margin of safety as defined in the basis of TSs will not be reduced.
DCP	1,2,3 FA-ZR-071	This DCP adds three ladders and handrails in the radwaste building. This change will replace temporary ladders used for maintenance in the storage tank area.	This does not introduce an unreviewed safety question. No changes to TSs are required. This change will not increase the probability or consequences of an accident previously evaluated. The ladders are not connected to any equipment, functional piping or electrical installations. The margin of safety as defined in the basis of TSs will not be reduced.
DCP	1,2,3 FJ-CP-028	This DCP rewires the valve's motor operator to provide improved overall operation of the system's valves and to provide the operator with more accurate valve status information. The DCP will place the torque switch bypass and indication circuits on separate rotors. This will optimize MOV operation and position indication. This change will improve MOV reliability by eliminating the compromise between the torque switch bypass setpoint and the valve position indication setpoint.	This does not introduce an unreviewed safety question. No changes to TSs are required. The probability or consequences of an accident previously evaluated will not be increased because this design change only modifies existing internal wiring, resets the limit switch settings, and modifies 13-J-ZZI-004. No new equipment is being added nor is any existing equipment being moved. The margin of safety as defined in the basis of TSs will not be reduced.

DOC TYPE	DOC NUMBER	DESCRIPTION	SUMMARY
DCP	1,2,3 FJ-SS-033	This DCP replaces the closed position indication switches and solenoid housing in all Valcor process solenoid valves. This modification is a like for like component change out. It does not change the function of the valve or the affects of the valve on the system.	This does not introduce an unreviewed safety question. No changes to TSs are required. The probability or consequences of an accident previously evaluated will not be increased. This change actually increases the reliability of the valve, thus, decreasing the probability of a malfunction. The margin of safety as defined in the basis of TSs will not be reduced.
DCP	1,2,3 OC-QF-076	This DCP installs soundproof booths for the existing phones located in high noise level areas in containment.	This does not introduce an unreviewed safety question. No changes to TSs are required. These phone booths are being attached to existing structural members and do not interact or interfere with the operations of containment, therefore, there is no increase in the probability of a previously evaluated accident. Soundproof booths and supports are constructed from approved material to be used in containment. Combustible loadings have been checked and deemed negligible. The margin of safety as defined in the basis of TSs will not be reduced.
DCP	1,2,3 OE-SQ-049	The DCP provides an isolated grounding system for the Radiation Monitoring System in order to reduce false alarms and erroneous readings. This change is not described in the UFSAR, will not modify procedures described in the UFSAR and will not add tests or experiments not described in the UFSAR.	This does not introduce an unreviewed safety question. This change will provide the removal of all present grounding ties to plant ground and install an isolated ground system back to plant grounding mat. This feature is not described in the UFSAR and will not affect the safe operation of the plant. The margin of safety as defined in the basis of TSs will not be reduced.
DCP	1,2,3 PE-QD-028	The Emergency Lighting Upgrade design change has two purposes; (1) replace "Dual-Lite" emergency lighting units located in high radiation and high temperature areas of the Auxiliary Building with fluorescent fixtures fed from a "Holophane" Modular Power Station located in low radiation and mild temperature areas and (2) provide 8-hour emergency lighting for access/egress and operation activities at valves J-EWA-UV65 & 145. All equipment/components installed by this DCP are identical to those already in use at PVNGS.	This does not introduce an unreviewed safety question. Emergency lighting is not discussed in Chapter 15 (Accident Analysis) of the UFSAR. This DCP change will provide an assurance of a more reliable emergency lighting system and improve our capability to mitigate the consequences of a design basis accident. The margin of safety as defined in the basis of TSs will not be reduced.

DOC TYPE	NUMBER	DESCRIPTION	SUMMARY
DCP	1,2,3 PE-XE-004	This DCP is the third and final phase of the Station Blackout (SBO) Gas Turbine Generator (GTG) Project to provide an Alternate Alternating Current (AAC) power source. Phase III will perform the final hookup and interface of the GTG's with PVNGS Units 1, 2, and 3. This phase will be implemented in refueling cycles 1R4, 3R4, and 2R5, which are scheduled for November 1993, April 1994, and November 1994, respectively.	This does not introduce an unreviewed safety question. Provision is made to power loads in the 500kV switchyard to enhance its restoration in the event of a loss of offsite power. Each GTG has the capability for a black start without relying on external power sources. Provisions have been taken to protect equipment associated with the AAC from likely weather-related events, including high winds and lightning. Underground duct banks have been utilized to route 15kV cables from the GTGs to each unit. The cables are sized to continuously carry more than the guaranteed rated output of both GTGs operating in parallel, with each other simultaneously. Load, voltage regulation, and short circuit analyses have been performed to demonstrate the acceptability of the design. This DCP does not significantly change the existing design of the offsite power source for the Train A ESF bus. This change does not affect the existing safety-related design basis of the plant.
DCP	1,2,3 PJ-SB-071	This DCP replaces the Plant Protection System (PPS) Relay Hold Pushbutton with a 3-position rotary switch. The Pushbutton is located in the matrix test module(s) of each PPS cabinet (J-SBA-C01, J-SBB-C01, J-SBC-C01, J-SBD-C01). There are six pushbuttons per unit which will be replaced. The rotary switch will provide the same function as the existing pushbutton, which is to supply a test voltage to the hold coils of the selected double coil matrix relays and a test voltage of opposite polarity to the selected double coil bistable trip relays.	This does not introduce an unreviewed safety question. No changes to TSs are required. The probability or consequences of an accident previously evaluated will not be increased. The new matrix switch provides the same function as the existing pushbutton. The new relay matrix hold switch has no impact on the UFSAR analysis. This is a conservative change which will provide a dependable way to test the bistable ladder logic to ensure equipment important to mitigate an accident is actuated when necessary. The margin of safety as defined in the basis of TSs will not be reduced.
DCP	1,2,3 PJ-SD-037	This DCP acceptance of Belden instrumentation cables, Part #s 9520 and 9526, for use as non-1E field cabling added to the ERFDADS. The flame retardancy specifications of these cables are UL 1581 Vertical Tray Flame Test which is equivalent to testing required by IEEE 383 - 1974.	This does not introduce an unreviewed safety question. The Belden instrumentation cables are utilized in a non-1E application in the ERFDADS; it is to be installed in conduit and tray in a "mild environment" (between control room area cabinets via the upper and lower cable spreading rooms), consequently radiation and/or thermal transients are not a consideration in cable acceptability. The amount of combustible material added by these cables is very minimal and for the most part contained to the lower and upper cable spreading rooms of the control building which is uninhabited and does not contain functional equipment. The ERFDADS is not addressed in the PVNGS Technical Specifications.
DCP	1,2,3 PM-DG-071	This DCP replaces the originally supplied diesel generator (DG) starting air compressors, installs a coalescing filter upstream of the existing air dryers, relocates the existing compressor discharge safety valve from its present location to the dryer inlet area, replaces the existing dryer drain traps with solenoid type drain traps, and adds a cross-connect between the two starting air trains on one diesel engine. These changes are made to enhance starting system reliability and decrease the system unavailability hours. The new coalescing filter is located by the existing dryers which are located on the other side of the room from the air compressors. This modification installs a bypass line between the two air receivers.	This does not introduce an unreviewed safety question. The reliability of the DG system will either remain the same or will more than likely increase. The existing 2-stage 250 psig discharge pressure compressors will be replaced with 3-stage 500 psig discharge compressors. Two stage compressors are marginally suited for 250 psig operation. This was determined to be the major cause of blown head gaskets and warped compressor heads that have been a continuing problem with these units. The replacement compressors will only be required to operate at 250 psig. The existing safety valve location is on the compressor and is subject to compressor vibration and oil contamination. This is judged to be the main reason for continued inadvertent lifting of the safety valve. The use of this bypass does not create any condition that would compromise the DGs performance. These design enhancements will not change any of the parameters for the DG which are currently required by TSs. The margin of safety as defined in the basis of TSs will not be reduced.

DOC TYPE	DOC NUMBER	DESCRIPTION	SUMMARY
DCP	1,2,3 PM-RD-040	This DCP adds check valves to drains in the non-engineered safety feature (ESF) portion of the RD system. These valves will act as traps to prevent the back flow of noble gases into their respective rooms.	This does not introduce an unreviewed safety question. No changes to TSs are required. This change will not increase the probability or consequences of an accident previously evaluated. These valves will not increase the probability of a malfunction to the RD system. The valves are designed to fail in the open position and will not reduce the systems' capability to provide drainage. The margin of safety as defined in the basis of TSs will not be reduced.
DCP	1,2,3 PM-ZC-200	This DCP will install a Permanent Reactor Cavity/Refueling Pool Seal (PRCRPS) welded to the reactor vessel seal ledge and the refueling pool embedment ring to replace the current practice of installing and removing a temporary one for each refueling outage. The PRCRPS also offers far greater reliability against water leaks than the existing seal ring. In addition, the PRCRPS allows for a shorter refueling outage schedule and reduced exposure to maintenance personnel.	This does not introduce an unreviewed safety question. Accidents pertaining to the failure of the refueling pool seal during refueling operations are not addressed in the PVNGS UFSAR. The PRCRPS is designed, manufactured, and installed in such a manner as to not impede the normal thermal expansion and seismic movement of the reactor vessel. The consequences of an accident resulting from the failure of the PRCRPS would be no greater in magnitude than the failure of the existing, removable refueling pool seal. Analysis of the PRCRPS show that it will withstand, without failure, the drop of an assumed 1500 pound fuel assembly from a height of 14 inches. Consequences of LOCA radiation releases would not change with the installation of the PRCRPS. Installation of the PRCRPS does not increase the average air temperature in the containment building. The margin of safety as defined in the basis of TSs will not be reduced.
DCP	1,2,3 XM-CH-245	This DCP removes the RCP seal injection line thermal relief valve CHN-PSV865 and installs a blank flange in its place and on the line to the equipment drain tank where the relief valves are discharged to. A permanent blind will be installed from the auxiliary steam system to the seal injection heat exchanger.	This does not introduce an unreviewed safety question. The probability or consequences of an accident previously evaluated will not be increased. No changes to TSs are required. The RCPs will continue to operate and perform their design function in the unlikely event of partially degraded seals. Equipment important to safety will not be affected. The margin of safety as defined in the basis of TSs will not be reduced.
DCP	1,3 FJ-SG-160	This DCP replaces the closed position indication switches and solenoid housing in all Valcor process solenoid valves with higher sensitivity switches.	This does not introduce an unreviewed safety question. There are no changes to the Main Steam System. This modification is a like-for-like component changeout. It does not change the function of the valve or the effects of the valve on the system. The probability of an accident previously evaluated will not be increased. This modification does not change the function of the valve nor the operation requirements. The margin of safety as defined in the basis of TSs will not be reduced.

DOC TYPE	DOC NUMBER	DESCRIPTION	SUMMARY
DCP	1,3 LE-FP-164	This DCP converts the manually actuated, open head water spray system for the turbine bearings fire protection system to a closed head automatic pre-action system actuated by the presently installed thermal detector system. This change is being made to satisfy the American Nuclear Insurer's (ANIs) recommendation to make the system automatically actuated and, at the same time, prevent inadvertent spray of the bearing housing.	This does not introduce an unreviewed safety question. The fire protection/detection system is not described in the TSs, therefore, no changes to TSs are required. The proposed change will be an enhancement to the turbine bearing fire protection system. The change will decrease the probability of an inadvertent spray of the turbine bearings and enhance the system response time. The margin of safety as defined in the basis of TSs will not be reduced.
DCP	1,3 PC-CH-256	This DCP deletes all mechanical snubbers on the RCS Loop Drains Piping inside the containment building with one minor support modification (by adding a brace) for hanger #13-RC-061-H-00C.	This does not introduce an unreviewed safety question. No changes to TSs are required. The probability or consequences of an accident will not be increased because adequate redesign of support systems will not affect the operability of the Chemical and Volume Control System. The margin of safety as defined in the basis of TSs will not be reduced.
DCP	1,3 PC-SG-174	This DCP deletes mechanical shock absorbers (snubbers), replaces snubbers with rigid supports (struts), and reinforces supports on Snubber Reduction on the Number 1 Steam Generator Blowdown Lines.	This does not introduce an unreviewed safety question. No changes to TSs are required. The probability or consequences of an accident will not be increased. The calculations issued with this DCP show that the stresses in the piping system, the loads on the supports, and the structural steel are within the allowables setforth in the Project General Design Criteria, Section 3.6.5.4. The margin of safety as defined in the basis of TSs will not be reduced.
DCP	1,3 PC-SG-175	This DCP deletes mechanical shock absorbers (snubbers), replaces snubbers with rigid supports (struts), and reinforces supports on Snubber Reduction on the Number 2 Steam Generator Blowdown Lines.	This does not introduce an unreviewed safety question. No changes to TSs are required. The probability or consequences of an accident will not be increased. The calculations issued with this DCP show that the stresses in the piping system, applicable nozzles, wet layup pumps, the loads on the supports and the structural steel are within the allowables setforth in the Project General Design Criteria, Section 3.6.5.4. The margin of safety as defined in the basis of TSs will not be reduced.

DOC TYPE	DOC NUMBER	DESCRIPTION	SUMMARY
DCP	1,3 PC-SG-184	This DCP proposes to delete all mechanical snubbers on Main Steam Lines 033, 036, 042 & 045 inside the Containment Building and without any additional piping/support relocation or modification.	This does not introduce an unreviewed safety question. No changes to TSs are required. Stress calculation shows that the stresses in the piping system, the loads on supports and the structural steel are within the allowables setforth in the ASME Code Section NC-3600 and the PVNGS UFSAR Tables 3.9-10 and 3.9-11. The piping/support reconfiguration has been properly designed and has met all the requirements of the ASME Code, PVNGS Design Criteria, and the UFSAR. Nozzle and penetration allowable loads were also maintained during this analysis, thereby having no affect on the maximum allowable stresses or structural integrity. The margin of safety as defined in the basis of TSs will not be reduced.
DCP	1,3 PC-SI-206	This DCP deletes mechanical shock absorbers (snubbers), replaces snubbers with rigid supports (struts), and reinforces supports on the Safety Injection/Shutdown Cooling System Return from the Reactor Hot Leg to the LPSI Pump 2 inside Containment.	This does not introduce an unreviewed safety question. No changes to TSs are required. The probability or consequences of an accident will not be increased. The calculations issued with this DCP show that the stresses in the piping system, the loads on the supports, and the structural steel are within the allowables setforth in the Project General Design Criteria, Section 3.6.5.4. The margin of safety as defined in the basis of TSs will not be reduced.
DCP	1,3 PC-SI-207	This DCP deletes mechanical shock absorbers (snubbers), replaces snubbers with rigid supports (struts), and reinforces supports on the Safety Injection/Shutdown Cooling System Return from the Reactor Hot Leg to the LPSI Pump 1 inside Containment.	This does not introduce an unreviewed safety question. No changes to TSs are required. The probability or consequences of an accident will not be increased. The calculations issued with this DCP show that the stresses in the piping system, the loads on the supports, and the structural steel are within the allowables setforth in the Project General Design Criteria, Section 3.6.5.4. The margin of safety as defined in the basis of TSs will not be reduced.
DCP	1,3 PJ-DF-017	This DCP changes the level instrumentation on the EDG storage and day tanks. These changes are made for increased accuracy and ease of instrument calibration. The read out devices are changed to allow more precise indication of the volume of stored fuel. The tubing change at the day tank is done to allow easier calibration of the level indicator.	This does not introduce an unreviewed safety question. No changes to TSs are required. This DCP does not change any of the operations or processes on the DG. The change merely allows operators to determine the quantity of fuel in the day tank and storage tank more accurately. The probability and consequences of an accident previously evaluated will not be increased. The changes do not alter the DG start, running, load carrying, or control characteristics. The margin of safety as defined in the basis of TSs will not be reduced.

DOC TYPE	DOC NUMBER	DESCRIPTION	SUMMARY
DCP	1,3 PJ-SC-136	This DCP makes changes to the secondary sampling system by redesigning the auxiliary building cold lab and wet racks, replacing, relocating, and adding analyzers, changing the interface with the Micomax computer system, and connecting non-Class 1E UPS power to the auxiliary building cold lab computer.	This does not introduce an unreviewed safety question. This change does not involve a test or experiment, and does not require a change to the Technical Specifications. The change does not increase the probability or consequences of an accident nor increase the probability or consequences of a malfunction of equipment important to safety. No new accidents or malfunctions have been created and the margin of safety, identified in the Technical Specifications Basis, has not been reduced. The Secondary Chemical Control System is not safety-related and performs no safety function.
DCP	1,3 PJ-SD-038	This DCP replaces the existing ERFDADS/SPDS with a new system, keeping only the existing Input/Output (I/O) portion of the system. This modification will also provide, for the Emergency Response Data System (ERDS), a communication link to the NRC offices to transmit ERFDADS data for the new ERFDADS.	This does not introduce an unreviewed safety question. The ERFDADS/SPDS is Quality Class NQR, is not a safety-related system, and is not required to operate during a plant emergency. This modification does not affect any of the plant systems or subsystems essential to plant reliability/availability. The new ERFDADS/SPDS meet the requirements stemming from NUREG-0737, including the issuance of a Safety Analysis Report. The margin of safety as defined in the basis of TSs will not be reduced.
DCP	1,3 PM-IA-066	This DCP replaces the existing 400 scfm capacity instrument air dryers and filters with larger 1000 scfm capacity units. The benefits of this change will be an increase in capacity such that the dryers have the ability to handle higher air flows expected during transient events as well as improved dryer reliability.	This does not introduce an unreviewed safety question. No changes to TSs are required. This change will not increase the probability or consequences of an accident previously evaluated; it may in fact reduce this by maintaining air quality at higher flow rates expected during transient events. The nitrogen system provides backup to instrument air in the event instrument air header pressure decreased to 85 psig. The margin of safety as defined in the basis of TSs will not be reduced.
DCP	1,3 PM-SC-147	This DCP installs a vendor-supplied boric acid treatment (BAT) skid, and all ancillary equipment. The BAT skid will provide a means to deliver the Boron solution to the main feedwater system, and ultimately to the Steam Generator. Adding the Boron should help mitigate strong caustic induced intergranular stress corrosion cracking (IGSCC) corrosion which has exhibited a degradation in Steam Generator tubes of other U.S. Nuclear Power Plants.	This does not introduce an unreviewed safety question. The BAT system is an addition to the Secondary System which will enhance the design, function and method of the Secondary System as it performs its primary function. The Feedwater system is protected from a loss of feedwater accident by double check valves in the BAT injection lines. Adding the BAT system to the Secondary System does not alter the design, function or method of the Structures, Systems or Components (SSC) of the Secondary System. The BAT skid is self contained. The BAT injection points are upstream of the Feedwater Isolation Valves and the essential Auxiliary Feedwater System injection points. The margin of safety as defined in the basis of TSs will not be reduced.

DOC TYPE	DOC NUMBER	DESCRIPTION	SUMMARY
DCP	TLC-CH-252	This DCP installs a temporary charcoal bed vessel to remove total organic carbon (TOC) from the holdup tank.	This does not introduce an unreviewed safety question. No changes to TSs are required. This change will not increase the probability or consequences of an accident previously evaluated. The tank will be restrained to prevent it from becoming a missile in the event of a seismic event. Thus, no equipment important to safety can be affected. The margin of safety as defined in the basis of TSs will not be reduced.
DCP	2 LM-ED-100	This "generic" 50.59 Safety Analysis is written for the purpose of ascertaining the impacts of repairing/replacing components (fittings/pipe) which exhibited wall thinning due to Erosion/Corrosion (E/C). The components in questions are located in Quality Class-Q, QAG and NQR systems. Systems reviewed were ED,FW,SG, MT, and CD. Initially, components are UT inspected and the thicknesses compared to the Civil-Stress minimum allowable wall thickness. Components are then repaired by depositing weld material (weld overlay) on the outside of the components, or replaced if a prior repair has been performed. This repair will enable the component to operate safely until at least the next scheduled refueling outage.	This does not introduce an unreviewed safety question. No changes to TSs are required. The weld overlay repair, thickness requirements, or replacement material of the components is not specifically addressed in the TSs, and this change has no impact on Chapters 6 or 15 of the UFSAR. Additionally, system design, pressure retaining function, and system operability will not be affected. This change does not violate the functional design, material or construction standards applicable, or affect the overall performance of the system. This change neither impacts the operability requirements of any safety-related or equipment ITS. The margin of safety as defined in the basis of TSs will not be reduced.
DCP	AFE-ZY-203	This DCP rewires the TSC HVAC control panels and the fire alarm control panel. This change will cause the HVAC units to shut down upon a fire alarm. This modification is for personal safety during a fire in the TSC.	This does not introduce an unreviewed safety question. No changes to TSs are required. This change has no impact on any evaluated accident. This modification is for personal safety during a fire in the TSC. The TSC, HVAC and fire detection systems do not interface with power block systems. The margin of safety as defined in the basis of TSs will not be reduced.
DCP	AOC-ZY-215	This DCP modifies the drainage structures (located outside of the protected area) which accept run-off from within the protected area.	This does not introduce an unreviewed safety question. No changes to TSs are required. The only affected ITS equipment is the Fire Protection system. All fire protection lines, hydrants, extinguishers, pumps, etc, will be undisturbed. This work is outside of the PA and does not involve any operating systems, redundant trains, thus not creating the possibility of an accident previously evaluated. The margin of safety as defined in the basis of TSs will not be reduced.

DOC TYPE	DOC NUMBER	DESCRIPTION	SUMMARY
DCP	AP-M-CI-054	This DCP replaces the buried Hypo and Caustic PVC piping with above ground, lined carbon steel pipe in the following locations: Condensate Deminerlizer Day Tank, Chemical Waste Neutralization Tank, Blowdown Deminerlizer Day Tank, and the Spray Pond Day Tank. This change will help eliminate the environmental concerns associated with the current underground PVC piping which continues to deteriorate.	This does not introduce an unreviewed safety question. No changes to TSs are required. These systems are NQR and perform no safety related function. In addition, these systems do no interface with any systems required for safe shutdown of the plant. The margin of safety as defined in the basis of TSs will not be reduced.
DFWO	661873	This DFWO will disable the heater for sensor #6 on the "A" train RVLMS. The #6 sensor is inoperable, and it is recommended continued operation for this HJTC assembly since 3 plenium/head region sensors are still operable. The heater will be simulated by the installation of a load dropping resistor that will allow the continued use of the companion circuit. This change will disable the #6 sensor thermocouple inputs, and jumpers will be installed to maintain adequate temperature inputs for heater controller power computations.	This does not introduce an unreviewed safety question. This does not require a change to the TSs. Loss of this repair would revert back to a condition that was present prior to the installation of the repair. The complete failure of this repair will result in a loss of a portion of the "A" train level indication only and would not cause a malfunction of a different type then previously evaluated in the UFSAR. The margin of safety as defined in the basis of TSs will not be reduced.
DFWO	670768	This DFWO is for U1 SG 1 Cold Leg tube plugging.	This does not introduce an unreviewed safety question. This change does not involve a test or experiment, and does not require a change to the Technical Specifications. The change does not increase the probability or consequences of an accident nor increase the probability or consequences of a malfunction of equipment important to safety. No new accidents or malfunctions have been created and the margin of safety, identified in the Technical Specifications Basis, has not been reduced. The total number of tubes plugged in this SG is 169. This is less than the 400 assumed in the non-LOCA portion of the safety analysis and the 2000 assumed in the LOCA analysis.
DFWO	670769	This DFWO is for U1 SG 1 Hot Leg tube plugging.	This does not introduce an unreviewed safety question. This change does not involve a test or experiment, and does not require a change to the Technical Specifications. The change does not increase the probability or consequences of an accident nor increase the probability or consequences of a malfunction of equipment important to safety. No new accidents or malfunctions have been created and the margin of safety, identified in the Technical Specifications Basis, has not been reduced. The total number of tubes plugged in this SG is 169. This is less than the 400 assumed in the non-LOCA portion of the safety analysis and the 2000 assumed in the LOCA analysis.

DOC TYPE	DOC NUMBER	DESCRIPTION	SUMMARY
DFWO	670770	This DFWO is for U1 SG 2 Cold Leg tube plugging.	This does not introduce an unreviewed safety question. This change does not involve a test or experiment, and does not require a change to the Technical Specifications. The change does not increase the probability or consequences of an accident nor increase the probability or consequences of a malfunction of equipment important to safety. No new accidents or malfunctions have been created and the margin of safety, identified in the Technical Specifications Basis, has not been reduced. The total number of tubes plugged in this SG is 302. This is less than the 400 assumed in the non-LOCA portion of the safety analysis and the 2000 assumed in the LOCA analysis.
DFWO	670771	This DFWO is for U1 SG 2 Hot Leg tube plugging.	This does not introduce an unreviewed safety question. This change does not involve a test or experiment, and does not require a change to the Technical Specifications. The change does not increase the probability or consequences of an accident nor increase the probability or consequences of a malfunction of equipment important to safety. No new accidents or malfunctions have been created and the margin of safety, identified in the Technical Specifications Basis, has not been reduced. The total number of tubes plugged in this SG is 302. This is less than the 400 assumed in the non-LOCA portion of the safety analysis and the 2000 assumed in the LOCA analysis.
DFWO	674093	This DFWO removes the top row of louvers from the cooling towers. The existing concrete louvers on the cooling towers have shown deterioration due to the attack of chloride and sulfate occurring in the circulating waters. This DFWO also adds drainage slabs under each cooling tower.	This does not introduce an unreviewed safety question. This change does not involve a test or experiment, and does not require a change to the Technical Specifications. The probability of an accident previously evaluated in the UFSAR will not be increased. Removal of the top row of louvers will improve current safety conditions for personnel working around the cooling towers. The margin of safety as defined in the basis of TSs will not be reduced.
DFWO	679955	This DFWO removes post indicator valve (PIV) 081 from system and installs a blind flange to the flange just upstream of PIV 081. This change is needed to correct a small leak in PIV 081 in the maintenance shop. PIV 081 is no longer required because the old maintenance shop has been eliminated.	This does not introduce an unreviewed safety question. This does not require a test or a change to the TSs. The probability of an accident previously evaluated will not be increased. The fire protection system is still in service to all areas requiring fire protection water. The margin of safety as defined in the basis of TSs will not be reduced.

DOC TYPE	DOC NUMBER	DESCRIPTION	SUMMARY
DFWO	683382	This DFWO reworks the Control Room Essential Filtration System supports 301-4T-33, 301-4V-47, and 301-2-2 such that there is no gap between the duct band ear and the supports.	This does not introduce an unreviewed safety question. This does not require a test or a change to the TSs. The probability of an accident previously evaluated will not be increased. The Control Room Essential Filtration System will ensure control room habitability during any design basis accident. The margin of safety as defined in the basis of TSs will not be reduced.
DFWO	687427	This DFWO provides the results of eddy current testing of S/G 2/1 cold leg tubes and tube plugging/staking required by the analysis.	This does not introduce an unreviewed safety question. This change does not involve a test or experiment, and does not require a change to the Technical Specifications. The change does not increase the probability or consequences of an accident nor increase the probability or consequences of a malfunction of equipment important to safety. No new accidents or malfunctions have been created and the margin of safety, identified in the Technical Specifications Basis, has not been reduced. The total number of tubes plugged is 420. LOCA safety analysis is based on 2000 plugged tube per SG. Non-LOCA analysis is based on 1500 plugged tubes per SG.
DFWO	687428	This DFWO provides the results of eddy current testing of S/G 2/1 hot leg tubes and tube plugging/staking required by the analysis.	This does not introduce an unreviewed safety question. This change does not involve a test or experiment, and does not require a change to the Technical Specifications. The change does not increase the probability or consequences of an accident nor increase the probability or consequences of a malfunction of equipment important to safety. No new accidents or malfunctions have been created and the margin of safety, identified in the Technical Specifications Basis, has not been reduced. The total number of tubes plugged is 420. LOCA safety analysis is based on 2000 plugged tube per SG. Non-LOCA analysis is based on 1500 plugged tubes per SG.
DFWO	687429	This DFWO provides the results of eddy current testing of S/G 2/2 cold leg tubes and tube plugging/staking required by the analysis.	This does not introduce an unreviewed safety question. This change does not involve a test or experiment, and does not require a change to the Technical Specifications. The change does not increase the probability or consequences of an accident nor increase the probability or consequences of a malfunction of equipment important to safety. No new accidents or malfunctions have been created and the margin of safety, identified in the Technical Specifications Basis, has not been reduced. The total number of tubes plugged is 1190. LOCA safety analysis is based on 2000 plugged tube per SG. Non-LOCA analysis is based on 1500 plugged tubes per SG.

DOC TYPE	C NUMBER	DESCRIPTION	SUMMARY
DFWO	687430	This DFWO provides the results of eddy current testing of S/G 2/2 hot leg tubes and tube plugging/staking required by the analysis.	This does not introduce an unreviewed safety question. This change does not involve a test or experiment, and does not require a change to the Technical Specifications. The change does not increase the probability or consequences of an accident nor increase the probability or consequences of a malfunction of equipment important to safety. No new accidents or malfunctions have been created and the margin of safety, identified in the Technical Specifications Basis, has not been reduced. The total number of tubes plugged is 1190. LOCA safety analysis is based on 2000 plugged tube per SG. Non-LOCA analysis is based on 1500 plugged tubes per SG.
DFWO	694594	This DFWO replaces 1-1/2" nickel-aluminum-bronze bolts in the discharge flange of the plant cooling water pump with 1-1/4" SA564 grade 630 bolts due to misalignment of the flange faces.	This does not introduce an unreviewed safety question. This change does not involve a test or experiment, and does not require a change to the Technical Specifications. The change does not increase the probability or consequences of an accident nor increase the probability or consequences of a malfunction of equipment important to safety. No new accidents or malfunctions have been created and the margin of safety, identified in the Technical Specifications Basis, has not been reduced. The smaller bolts meet the design requirements of the larger bolts by providing the needed torqueing.
DFWO	696088	This DFWO identified that valve 3PSGNV115, 3/1 SG Wet Lay-up Isolation, bonnet cavity was filled with leak seal compound which would not allow the valve to open.	This does not introduce an unreviewed safety question. This change does not involve a test or experiment, and does not require a change to the Technical Specifications. The change does not increase the probability or consequences of an accident nor increase the probability or consequences of a malfunction of equipment important to safety. No new accidents or malfunctions have been created and the margin of safety, identified in the Technical Specifications Basis, has not been reduced. The valve is not important to safety and is not used in any accident scenario. It is in its normal operating position (closed).
DFWO	697835	This DFWO allowed repairs to be made to the hand hole in U1 SG2. Damage was caused by boric acid and stem cutting discovered during chemical cleaning.	This does not introduce an unreviewed safety question. This change does not involve a test or experiment, and does not require a change to the Technical Specifications. The change does not increase the probability or consequences of an accident nor increase the probability or consequences of a malfunction of equipment important to safety. No new accidents or malfunctions have been created and the margin of safety, identified in the Technical Specifications Basis, has not been reduced. All repairs meet ASME Code requirements and SG design, and pressure retaining functions remain unchanged.

DOC TYPE	DOC NUMBER	DESCRIPTION	SUMMARY
DFWO	704796	This DFWO evaluates the effects of a whirl-pack that was lost in the Rx vessel and was not retrieved. The whirl-pack consisted of a 4X8 inch poly bag, and two SS wires about 7X1/50th inch.	This does not introduce an unreviewed safety question. The analysis shows, that based on its size and composition, the existence of the whirl-pack does not increase the probability or consequences of an accident nor increase the probability or consequences of a malfunction of equipment important to safety. No new accidents or malfunctions have been created and the margin of safety, identified in the Technical Specifications Basis, has not been reduced.
DFWO	704834, 704836, 704837	This DFWO reviews the safety effect of Non-1E/NQR indication circuitry within the 1E/Q class control circuitry for valve J-AFA-HV-54 (TDAFWP Trip/Throttle valve).	This does not introduce an unreviewed safety question. This change does not involve a test or experiment, and does not require a change to the Technical Specifications. The change does not increase the probability or consequences of an accident nor increase the probability or consequences of a malfunction of equipment important to safety. No new accidents or malfunctions have been created and the margin of safety, identified in the Technical Specifications Basis, has not been reduced. The analysis performed concluded that a ground fault failure will not impact the ability of the valve to perform its safety function.
DFWO	710539	This DFWO allows a jam nut to be used on the Unit 3 SG#1 line 2 sample line isolation valve. The valve is missing its valve handle. The jam nut allows the valve plug to be secured in place against the backseat and allows the valve to isolate system pressure from the packing gland until it can be re-worked.	This does not introduce an unreviewed safety question. This evaluation does not involve a test or experiment, and does not require a change to the Technical Specifications. The evaluation does not increase the probability or consequences of an accident nor increase the probability or consequences of a malfunction of equipment important to safety. No new accidents or malfunctions have been created and the margin of safety, identified in the Technical Specifications Basis, has not been reduced. This valve is not important-to-safety and has no impact on equipment important-to-safety.
DFWO	710596	This DFWO changes the Letdown to Regen Heat Exchanger Containment Isolation Valve (1JCHBUV0515) bench set. This change is designed to bring the valve back into compliance with the original design basis.	This does not introduce an unreviewed safety question. This change does not involve a test or experiment, and does not require a change to the Technical Specifications. The change does not increase the probability or consequences of an accident nor increase the probability or consequences of a malfunction of equipment important to safety. No new accidents or malfunctions have been created and the margin of safety, identified in the Technical Specifications Basis, has not been reduced. The change only affects the open stroke by limiting it to 5/8 inch or less from one inch.

DOC TYPE	C NUMBER	DESCRIPTION	SUMMARY
DFWO	710597	This DFWO returns the Regen Heat Exchanger to Letdown Heat Exchange Isolation Valve (1JCHBUV0523) back to the original design basis. This change limits the full stroke to 5/8 inch from 1 inch.	This does not introduce an unreviewed safety question. This change does not involve a test or experiment, and does not require a change to the Technical Specifications. The change does not increase the probability or consequences of an accident nor increase the probability or consequences of a malfunction of equipment important to safety. No new accidents or malfunctions have been created and the margin of safety, identified in the Technical Specifications Basis, has not been reduced. The valve is still capable of closing as required during accidents.
DFWO	710733	This DFWO reviews the affects of foreign material in the reactor vessel.	This does not introduce an unreviewed safety question. A review of the reactor internal assembly and fuel assembly drawings indicate that these parts are most likely located in the very bottom of the vessel. It should be noted that these parts cannot get through the fuel assemblies in one piece since the spacer grids will not allow the parts to pass up a fuel assembly due to size constraints. The parts are too large to pass through the core and continuously recirculate through systems. These parts will not move out of the reactor vessel and they will stay in the vessel throughout the life of the vessel. The impact of these parts is negligible and will not cause further damage, nor will they result in safety related equipment not being capable of performing their intended safety function.
DFWO	712091	This DFWO replaces the relay hold pushbutton on the NSS ESFAS ARC test panel. The current pushbutton was a momentary action pushbutton. The replacement is a three position keylock pushbutton.	This does not introduce an unreviewed safety question. This does not require a change to the TSs. The probability of an accident previously evaluated in the UFSAR will not be increased. This modification will not bypass any part of the protection system during testing or in any of its failure modes. The margin of safety as defined in the basis of TSs will not be reduced.
DFWO	712556	This DFWO uses a fillet weld in place of a retainer nut on valve 1PRCDV271 on channel A of a PPS instrumentation.	This does not introduce an unreviewed safety question. This change does not involve a test or experiment, and does not require a change to the Technical Specifications. The change does not increase the probability or consequences of an accident nor increase the probability or consequences of a malfunction of equipment important to safety. No new accidents or malfunctions have been created and the margin of safety, identified in the Technical Specifications Basis, has not been reduced. The use of tack welds verses a retaining nut does not affect any features or functions of the valve. The failure position, size, design temperature and pressure of the valve have not changed.

DOC TYPE	DOC NUMBER	DESCRIPTION	SUMMARY
DFWO	713350, 713353, 713354	These DFWOs upgrade the classification of radiation monitors in the EW and some associated piping from R2D to Q1C.	This does not introduce an unreviewed safety question. This change does not involve a test, and does not require a change to the TSs. The upgrade of the components to classification Q1C for maintaining pressure boundary integrity, will ensure that no inventory loss occurs from these components during an SSE. This will ensure that the safety-related heat removal function of the system during normal or accident conditions is not impacted. The margin of safety as defined in the basis of TSs will not be reduced.
DFWO	726891	This DFWO allows the repair of an Appendix R 2-hr fire rated gypsum wall located at the 140' elevation of the auxiliary building. The section to be repaired is located above the suspended ceiling adjacent to the RP island.	This does not introduce an unreviewed safety question. This does not require a change to the TSs. Train A safe shutdown equipment located in fire zone 57J would not be affected by the configuration of the barrier around the HVAC chase. There are no new unanalyzed impacts on plant safety as a result of this change. This change has no affect on the accidents evaluated in the UFSAR. The margin of safety as defined in the basis of TSs will not be reduced.
DFWO	728181	This DFWO allows operation of pipe spool nozzle N8 on heat exchanger 2MEWBE01 in Unit 2 with a section uncoated until the next refueling outage. This is a result of the pipe nozzle having a leak repaired by welding. This is a conditional release.	This does not introduce an unreviewed safety question. This does not require a test or a change to the TSs. This change is based on engineering estimates of corrosion - this provides for no loss of structural integrity in the time until the next refueling outage. The reworked wall thickness has ample margin for the predicted corrosion until the next outage. There is not any malfunction of the EW heat exchanger that would cause this uncoated section of piping to release increased amounts of radiation. The probability of a malfunction of equipment important to safety will not be increased. The margin of safety as defined in the basis of TSs will not be reduced.
DFWO	733626	This DFWO concerns the reactor head. During the installation of the UGS lift rig into its storage location, the south bolt's threads would not engage. The two other bolts are fully engaged and torqued appropriately. There is concern that the reactor (which does not have the reactor head installed) is within the Seismic IX zone of influence of the UGS lift rig. The UGS lift rig is classified as quality class QAG/seismic category IX. The Licensing Basis gives no guidance for storage or mounting requirements.	This does not introduce an unreviewed safety question. This does not require a change to the TSs. There would be no possibility of the rig turning, tipping, or falling out of the pit as a result of a seismic event. The reinforced concrete, lined, stainless steel plated pit will not be significantly affected/damaged by the UGS lift rig even if the 2 installed bolts failed under a postulated seismic event. The margin of safety as defined in the basis of TSs will not be reduced.

DOC TYPE	DOC NUMBER	DESCRIPTION	SUMMARY
DFWO	733838	This DFWO will repair the LPMS to its design function. During a Unit 3 refueling outage, the reactor vessel top head insulation was incorrectly re-installed. The insulation comprises of 4 quadrants, two of the quadrants were interchanged. This is of no consequence to the insulation performance but impacts the access to one of the 2 accelerometers mounted on the head studs - these accelerometers provide signals to the LPMS. The top head accelerometers are well mounted from an acoustic transmission path consideration. Locating channel #2 at flange hole location #10 will not cause any significant change in system sensitivity.	This does not introduce an unreviewed safety question. This does not require a change to the TSs. Reactor vessel upper head closure studs at the normal location for channel #2 and the relocated position are identical as is the accelerometer and the mounting technique, therefore, it does not change the probability of a malfunction of equipment important to safety. The margin of safety as defined in the basis of TSs will not be reduced.
DFWO	733986	This DFWO reworks the new impeller on the containment spray pump. The reason for this modification is to specifically increase the performance of the pump above the current minimum value. Excessive pump performance, in terms of head and capacity, has been considered for which limits have been imposed.	This does not introduce an unreviewed safety question. This does not require a test or a change to the TSs. Failure of this change cannot increase the probability of any events described in the UFSAR. The new modified impeller will enhance CS pump performance and will provide additional margin to ensure the minimum credited flow rates in the LOCA and MSLB containment analysis of the UFSAR are met. The margin of safety as defined in the basis of TSs will not be reduced.
DFWO	738826	This DFWO is needed to troubleshoot and determine why the containment spray pump isolation valve would not stroke from the control room. The change will install a circumferential shim around the motor stator to re-establish the Limitorque intended stator to housing fit.	This does not introduce an unreviewed safety question. This does not require a change to the TSs. This change has no affect on the accidents previously evaluated in the UFSAR. The consequences of a malfunction are not affected by the installation of the shim. The margin of safety as defined in the basis of TSs will not be reduced.
DMWO	650813	This DMWO removes unused multilevel supervisory boards and card reader boards within the security and fire protection computer network.	This does not introduce an unreviewed safety question. This change does not involve a test or experiment, and does not require a change to the Technical Specifications. The change does not increase the probability or consequences of an accident nor increase the probability or consequences of a malfunction of equipment important to safety. No new accidents or malfunctions have been created and the margin of safety, identified in the Technical Specifications Basis, has not been reduced. No changes to the security plan are being made. Compensatory measures will be in place during modifications to replace any loss of control room annunciators.

DOC TYPE	DOC NUMBER	DESCRIPTION	SUMMARY
DMWO	688090	This DMWO updates the EOF HVAC system to accommodate the minor building modifications that have occurred. The following modifications will be performed: 1) The supply and return air in a new office will be adjusted to provide cooling for the new office space. 2) A large office has been converted into two separate offices; this modification will remove the large single diffuser and install two smaller diffusers. 3) The outside air duct will be resized for optimal performance.	This does not introduce an unreviewed safety question. No changes to TSs are required. No safety-related equipment will not be affected. These changes are minor in nature and can be done on line without considering the EOF unavailable. The modifications have no impact on the UFSAR accident evaluations. The margin of safety as defined in the basis of TSs will not be reduced.
DMWO	693599	This DMWO modifies the steam supply piping to the steam turbine of the turbine driven auxiliary feedwater pump to provide adequate drainage. The change also increases the steam supply capability of the bypass valve/piping, changing the agastat time delay to allow longer warm-up, and slowing of steam admission valves to minimize the step change in steam supply to the turbine.	This does not introduce an unreviewed safety question. This change does not involve a test or experiment, and does not require a change to the Technical Specifications. The change does not increase the probability or consequences of an accident nor increase the probability or consequences of a malfunction of equipment important to safety. No new accidents or malfunctions have been created and the margin of safety, identified in the Technical Specifications Basis, has not been reduced. AFW is not relied upon to mitigate or cool down for LOCA events. Chapters 15 and 6 events assumed a 46 sec delay and the change stays within this assumption.
DMWO	694261	This DMWO installs a Cathodic Protection for the Cooling Tower beams/columns. The installation is based on the MATCOR System Review Report for the Unit 3 Cooling Tower #1 Trial System. The cathodic protection is intended to inhibit corrosion of the cooling towers and thus extend the life of the structural components of the cooling towers. The installation of the cathodic protection system is attached to the structural components of the cooling towers and both are stationary components.	This does not introduce an unreviewed safety question. No changes to TSs are required. The CWS is modeled in the UFSAR but does not take credit for the cooling tower temperature reduction. The cooling towers are not included in the model, therefore, the modification does not increase the probability of an accident previously evaluated. The cooling towers are NQR and are not equipment important to safety. The margin of safety as defined in the basis of TSs will not be reduced.
DMWO	694997	This DMWO removes the lead shot from around the PASS Remote Grab Sample Unit.	This does not introduce an unreviewed safety question. This change does not involve a test or experiment, and does not require a change to the Technical Specifications. The change does not increase the probability or consequences of an accident nor increase the probability or consequences of a malfunction of equipment important to safety. No new accidents or malfunctions have been created and the margin of safety, identified in the Technical Specifications Basis, has not been reduced. Removing this shielding does not affect personnel or equipment operability.

DOC TYPE	NUMBER	DESCRIPTION	SUMMARY
DMWO	696874	This DMWO replaces existing DG voltmeters (local and control room) with enhanced meters with better accuracy capable of indicating administrative limits (4100-4370 volts). Technical Specification limits remain the same (3740-4580 volts).	This does not introduce an unreviewed safety question. This change does not involve a test or experiment, and does not require a change to the Technical Specifications. The change does not increase the probability or consequences of an accident nor increase the probability or consequences of a malfunction of equipment important to safety. The voltmeters and transducer are electrically isolated and separated from the DG to assure that they cannot effect components essential to the DG emergency function. No new accidents or malfunctions have been created and the margin of safety, identified in the Technical Specifications Basis, has not been reduced.
DMWO	697022	This DMWO installs a filter upstream of the thermal air purge in the control building essential chillers.	This does not introduce an unreviewed safety question. This change does not involve a test or experiment, and does not require a change to the Technical Specifications. The change does not increase the probability or consequences of an accident nor increase the probability or consequences of a malfunction of equipment important to safety. No new accidents or malfunctions have been created and the margin of safety, identified in the Technical Specifications Basis, has not been reduced. The modification was analyzed to meet the seismic requirements of the essential chiller system.
DMWO	697388	This DMWO removes the damper blade package of the fusible link supply valve. By removing the blades (abandoning it in place) from the damper, a negative pressure required for a LOCA will not be interrupted.	This does not introduce an unreviewed safety question. No changes to TSs are required. Removing the blade package will help mitigate the consequences of a radioactive material release in the auxiliary building by preventing a single failure by the blade package in the damper from isolating the auxiliary building from the fuel building exhaust filter trains. The margin of safety as defined in the basis of TSs will not be reduced.
DMWO	698070	This DMWO updates design and licensing documents based on DER 82-57 and EER 87-AF-068 which accepted carbon steel valves that were installed in Unit 1 Auxiliary Feedwater pump 6-inch discharge lines instead of the designated stainless steel valves.	This does not introduce an unreviewed safety question. This design change does not involve a test or experiment, and does not require a change to the Technical Specifications. The change does not increase the probability or consequences of an accident nor increase the probability or consequences of a malfunction of equipment important to safety. No new accidents or malfunctions have been created and the margin of safety, identified in the Technical Specifications Basis, has not been reduced. The EER provides for inspection of the valve body, internal, and transition weld at 5 year intervals.

DOC TYPE	DOC NUMBER	DESCRIPTION	SUMMARY
DMWO	699964	This DMWO installs a 45 micron (rigimesh) resin trap to replace each of the six 420 micron (conventional screen) resin traps.	This does not introduce an unreviewed safety question. This change does not involve a test or experiment, and does not require a change to the Technical Specifications. The change does not increase the probability or consequences of an accident nor increase the probability or consequences of a malfunction of equipment important to safety. No new accidents or malfunctions have been created and the margin of safety, identified in the Technical Specifications Basis, has not been reduced. This change does not affect any safety-related systems, structures, or components. Resin traps do not perform a safety function.
DMWO	701917	This DMWO adds a redundant tap for the pressure switch that auto starts the fire pumps. This will ensure that at least two pumps will maintain the auto-start feature if a sensing line becomes blocked by debris.	This does not introduce an unreviewed safety question. This change does not involve a test or experiment, and does not require a change to the Technical Specifications. The change does not increase the probability or consequences of an accident nor increase the probability or consequences of a malfunction of equipment important to safety. No new accidents or malfunctions have been created and the margin of safety, identified in the Technical Specifications Basis, has not been reduced. This modification enhances the reliability of the fire pumps auto-start capability.
DMWO	702013	This DMWO revises the RC system to allow an alternate method of placing the RWLMS into service when the pressurizer is open to containment. Currently, it is necessary to install a flexible tubing spool piece at valve RCE-V058 on top of the pressurizer to complete the RWLMS level transmitter reference leg connection to the RCS. Installation and removal of the spool piece is difficult because of the accessibility. This design change eliminates the need to install the spool piece, solving the accessibility problem.	This does not introduce an unreviewed safety question. This change does not involve a test or experiment, and does not require a change to the Technical Specifications. The change does not increase the probability or consequences of an accident nor increase the probability or consequences of a malfunction of equipment important to safety. No new accidents or malfunctions have been created and the margin of safety, identified in the Technical Specifications Basis, has not been reduced.
DMWO	704285	This DMWO is a paper change only to remove the reference of temporary start-up strainers from the associated P&IDs for systems AF,CH,CT,EC,EW,NC,PC, and SI. The startup strainers that were initially installed during construction, have been removed for normal operation and therefore, are not required.	This does not introduce an unreviewed safety question. This change does not involve a test or experiment, and does not require a change to the TSs. The probability of an accident previously evaluated in the UFSAR will not be increased. There is no physical work to be performed. This review confirms that the change to the P&IDs will not affect plant equipment. The margin of safety as defined in the basis of TSs will not be reduced.

DOC TYPE	DOC NUMBER	DESCRIPTION	SUMMARY
DMWO	704414	This DMWO allows the upgrading of the quality class downstream of valves EWB-V032 and EWA-V076 to class Q1C. These valves are on Essential Cooling Water Pump A discharge.	This does not introduce an unreviewed safety question. This change does not involve a test or experiment, and does not require a change to the Technical Specifications. The change does not increase the probability or consequences of an accident nor increase the probability or consequences of a malfunction of equipment important to safety. No new accidents or malfunctions have been created and the margin of safety, identified in the Technical Specifications Basis, has not been reduced. These gauges, pressure switches and piping are required to maintain pressure boundary integrity, but are not required to be functional during or post SSE.
DMWO	704593	This DMWO will install additional piping to the liquid radwaste system.	This does not introduce an unreviewed safety question. This change does not involve a test, and does not require a change to the TSs. The LRS is not necessary for safe shutdown of the plant. This modification adds piping, valves and fittings to the LRS. Equipment ITS will not be impacted by the installation. The margin of safety as defined in the basis of TSs will not be reduced.
DMWO	706600	This DMWO upgrades the ERFDADS SPDS displays to coordinate with the rewritten EOP procedures. The way the top level displays function and the way the top level logic is calculated will be modified.	This does not introduce an unreviewed safety question. This change does not involve a test or experiment, and does not require a change to the TSs. The probability of an accident previously evaluated in the UFSAR will not be increased. The ERFDADS/SPDS does not perform any controlling functions, either directly or indirectly through operator actions. It has no affect on plant operating conditions. The margin of safety as defined in the basis of TSs will not be reduced.
DMWO	706829, 706845, 706848/49, 706852, et. al	These DMWOs add a second redundant fuse to control power circuits to equipment in containment. These fuses are installed in series with the existing breaker or fuse.	This does not introduce an unreviewed safety question. This change does not involve a test or experiment, and does not require a change to the Technical Specifications. The change does not increase the probability or consequences of an accident nor increase the probability or consequences of a malfunction of equipment important to safety. No new accidents or malfunctions have been created and the margin of safety, identified in the Technical Specifications Basis, has not been reduced. This change will correct identified design deficiencies and return these circuits to full compliance with RG 1.63.

DOC TYPE	DOC NUMBER	DESCRIPTION	SUMMARY
DMWO	707252	This DMWO converts the temperature probes installed under T-Mods 1-90-SG-040, 2-90-SG-078, and 3-90-SG-036 which monitor auxiliary feedwater steam supply line temperature to permanent temperature test points. These T-Mods were evaluated under previous 50.59 evaluations.	This does not introduce an unreviewed safety question. This change does not involve a test or experiment, and does not require a change to the Technical Specifications. The change does not increase the probability or consequences of an accident nor increase the probability or consequences of a malfunction of equipment important to safety. No new accidents or malfunctions have been created and the margin of safety, identified in the Technical Specifications Basis, has not been reduced. This change is only adding the thermocouples to the plant drawings to show permanent test point location.
DMWO	707263	This DMWO replaces the relay hold pushbutton on the NSSS ESFAS ARC Test Panel. The original pushbutton was a momentary action pushbutton. The replacement is a three position keylock pushbutton. The switch operator will be removed from the existing contact blocks, and the replacement operator installed. There will be no electrical changes to the test circuit.	This does not introduce an unreviewed safety question. This change does not involve a test or experiment, and does not require a change to the TSs. The probability of an accident previously evaluated in the UFSAR will not be increased because this change is to a test circuit that is normally used to de-energize a single NSSS ESFAS subgroup relay for verification of relay and actuated equipment operation. The margin of safety as defined in the basis of TSs will not be reduced.
DMWO	708024	This DMWO changes the setpoint of the Essential Chilled Water pump discharge temperature from 140 degrees to 125 degrees.	This does not introduce an unreviewed safety question. This change does not involve a test or experiment, and does not require a change to the Technical Specifications. The change does not increase the probability or consequences of an accident nor increase the probability or consequences of a malfunction of equipment important to safety. No new accidents or malfunctions have been created and the margin of safety, identified in the Technical Specifications Basis, has not been reduced. The setpoint of 140 degrees did not allow for any instrument uncertainty (5.6 degrees). Reduction of the setpoint to 125 degrees provides sufficient margin for operator action without reaching a process limit.
DMWO	708537	This DMWO replaces the Limitorque operator model SMC-04 with a SMB-00-10 on the HPSI Containment Isolation valve (1JSIBUV626).	This does not introduce an unreviewed safety question. This change does not involve a test or experiment, and does not require a change to the Technical Specifications. The change does not increase the probability or consequences of an accident nor increase the probability or consequences of a malfunction of equipment important to safety. No new accidents or malfunctions have been created and the margin of safety, identified in the Technical Specifications Basis, has not been reduced. DG loading and seismic calculations were reviewed and no changes were required. There is no change in flow characteristics and both operators are qualified to the same EQ and seismic requirements.

DOC TYPE	DOC NUMBER	DESCRIPTION	SUMMARY
DMWO	[illegible]90	This DMWO revises the setpoint for pressurizer safety relief valve [illegible]ge detection and allows operation to adjust the setpoint in a predetermined range when nuisance alarms are verified.	This does not introduce an unreviewed safety question. This change does not involve a test or experiment, and does not require a change to the Technical Specifications. The change does not increase the probability or consequences of an accident nor increase the probability or consequences of a malfunction of equipment important to safety. No new accidents or malfunctions have been created and the margin of safety, identified in the Technical Specifications Basis, has not been reduced. The latest revision to the setpoint and uncertainty calculation established an acceptable range for the alarm setpoint. Administrative controls required validation that the alarm was a nuisance alarm prior to adjustment of the setpoint.
DMWO	711870	This DMWO eliminates the potential of contaminating the DW System by cutting and capping the DW flush line into the SS System Hot Leg Sample Line.	This does not introduce an unreviewed safety question. This does not require a test or a change to the TSs. The probability of an accident previously evaluated will not be increased. This DMWO does not change, add or delete an automatic feature, change the seismic qualification or change the quality group classification. Because the nuclear sampling system (NSS) is not ITS, no other systems are directly impacted by the modification. The margin of safety as defined in the basis of TSs will not be reduced.
DMWO	713838	This DMWO is a setpoint change of JLRNPSL0217 from 45 ± 2 psig to 25 ± 3 psig and widens the calibration tolerance to 3 psig. This instrument provides an auxiliary steam low pressure alarm for the LRS evaporator. The alarm setpoint is being lowered to identify abnormal operating conditions.	This does not introduce an unreviewed safety question. This change does not involve a test or experiment, and does not require a change to the TSs. The probability of an accident previously evaluated in the UFSAR will not be increased. The pressure switch on the auxiliary steam supply to the LR evaporator has no safety function. Changing the setpoint of this switch will not change the probability of malfunction of this component. The margin of safety as defined in the basis of TSs will not be reduced.
DMWO	714913	This DMWO removes a number of backflow preventers (BFP) from the domestic water service (DS) system. The BFPs will be replaced with piping spool pieces. An evaluation performed by Engineering determined that a number of the BFP devices installed in the DS system were not required by current regulations. By eliminating the unnecessary BFP devices, maintenance costs associated with these components will be eliminated.	This does not introduce an unreviewed safety question. This change does not involve a test or experiment, and does not require a change to the TSs. The probability of an accident previously evaluated in the UFSAR will not be increased. The spool pieces will match the material classification of the associated piping runs. This will ensure that the replacement spool pieces will be compatible for the intended service conditions. The weight of the spool pieces will be less than that of the existing BFP devices. As such, pipe stress and hangar loadings will not be of concern for this change. The margin of safety as defined in the basis of TSs will not be reduced.

DOC TYPE	DOC NUMBER	DESCRIPTION	SUMMARY
DMWO	717957	This DMWO installs a design change to SBCS to prevent spurious condenser interlocks. This change will tie test switch inputs to their normal logic high state, thereby eliminating the effects of induced noise at the logic card inputs. This change will enable the SBCS to better meet its design function requirements.	This does not introduce an unreviewed safety question. This does not require a test or a change to the TSs. The accident analysis for increased and/or decreased secondary heat removal is not impacted. The SBCS was not credited to mitigate any event in the safety analysis. Since the SBCVs continue to fail closed, there is no possibility of an accident of a different type. The margin of safety as defined in the basis of TSs will not be reduced.
DMWO	721830	This DMWO change is a paper change only modification to update 13-JM-711, Flexible Metal Hose, via EDC 95-01232.	This does not introduce an unreviewed safety question. This change does not involve a test, and does not require a change to the TSs. This change ensures that systems with metal hoses are designed and tested to accepted ASME Code and UFSAR requirements, and therefore, the probability of a malfunction of equipment important to safety is not increased. The margin of safety as defined in the basis of TSs will not be reduced.
DMWO	724164	This DMWO is a paper change only to remove the reference of temporary start-up strainers from the associated P&IDs and isometrics for various systems. The start-up strainers that were initially installed during construction were removed during start-up and are not required on the P&IDs.	This does not introduce an unreviewed safety question. This does not require a test or a change to the TSs. No physical work is required - this is a paper change only. The probability of a malfunction of equipment important to safety will not be increased. The margin of safety as defined in the basis of TSs will not be reduced.
DMWO	725392	This DMWO discusses that during an MSIS, the signal should be shown (in UFSAR) as closed not open. Also, this change clarifies the total steam blowdown rate and essential feedwater flow rate following a main steam line break and turbine trip, in conjunction with an MSIS failure to close.	This does not introduce an unreviewed safety question. This does not require a test or a change to the TSs. The changes to be made have already been approved and documented in various APS and CE calculations, memos, NRC letters, and procedures. This change does not affect any safety related equipment from performing its function. The margin of safety as defined in the basis of TSs will not be reduced.

DOC TYPE	DOC NUMBER	DESCRIPTION	SUMMARY
DMWO	730349	This DMWO installs pipe clamps on MS line 3PSGNL038 in the SG to eliminate vibration related problems. Pipe clamps will be installed to the steam line in the area of vibration sensitivity to alter the natural frequency of the line such that it no longer coincides with the vibration frequency of the vortex shedding caused by the steam flow around the sample nozzle.	This does not introduce an unreviewed safety question. This does not require a test or a change to the TSs. Since the design basis of the main steam system is unaffected and the stress calculation shows that ASME allowables are not challenged, there is no increase in probability of a malfunction of equipment ITS. The margin of safety as defined in the basis of TSs will not be reduced.
DMWO	733519	This DMWO involves an actuator gear modification to the AF-36/37 series containment isolation valves. The higher OAR improves the motor stall capability of the MOVs and increases the MOVs actual stroke times.	This does not introduce an unreviewed safety question. This does not require a test or a change to the TSs. The higher actual stroke time does not exceed the 15 second stroke time requirement as described in the Licensing Basis. The OAR change does not adversely impact any MOV function, the MOV assembly failure mechanisms, precursors, and consequences are not impacted by either the installation of the new gears or the resulting anticipated operational performance changes. The margin of safety as defined in the basis of TSs will not be reduced.
ECE	EZZ-A184	This change addresses certain components which were deleted from or added to the EQL. The status of qualification of this equipment has been previously addressed in other documents submitted to the NRC for review (NUREG-0588).	This does not introduce an unreviewed safety question. This does not require a test or a change to the TSs. This change in the EQ status does not affect the overall performance of any system that could lead to an accident or cause an increase in the probability of an accident. Equipment being deleted from the EQL is not required to perform a safety function, while the equipment being added to the EQL is found to be qualified and is expected to perform their safety functions during and after an accident. The probability of a malfunction of equipment important to safety will not be increased. The margin of safety as defined in the basis of TSs will not be reduced.
EDC	94-00501	This is a paper change only to P&IDs 123-M-SCP-003. This paper change is to illustrate the presence of the existing hydrazine fill connection on the hydrazine addition tanks. No physical work is required to be completed in the units.	This does not introduce an unreviewed safety question. This change does not involve a test, and does not require a change to the TSs. The hydrazine fill connection poses no constraints on plant operation or safety shutdown and does not increase the probability of an accident. The functions of the hydrazine addition system are outside of the realm of and do not interact with any ESF of the plant. The margin of safety as defined in the basis of TSs will not be reduced.

DOC TYPE	NUMBER	DESCRIPTION	SUMMARY
EDC	95-00471	This change modified the DG P&ID and vendor drawings to more accurately represent the workings of the governor overspeed butterfly valve and engine fuel racks.	This does not introduce an unreviewed safety question. This change does not involve a test or experiment, and does not require a change to the Technical Specifications. The change does not increase the probability or consequences of an accident nor increase the probability or consequences of a malfunction of equipment important to safety. No new accidents or malfunctions have been created and the margin of safety, identified in the Technical Specifications Basis, has not been reduced. No physical changes were made nor were changes made to the basis of the information used in any accident analysis. The only change that was made was clarifications to the details of vendor drawings.
EDC	95-00493	This EDC is a paper change only to the Domestic Water P&IDs to reflect the changes in SMOD WSM-DS-142 which were not previously incorporated.	This does not introduce an unreviewed safety question. This does not require a test or a change to the TSs. The DS system has no safety function and has no affect on any safety related components. The probability of a malfunction of equipment important to safety will not be increased. The margin of safety as defined in the basis of TSs will not be reduced.
EDC	95-00853	This EDC corrects design output documents to correctly reflect the as-installed wiring configuration for trouble alarm bells and fire alarm horns associated with fire protection control panels.	This does not introduce an unreviewed safety question. This change does not involve a test or experiment, and does not require a change to the TSs. The probability of an accident previously evaluated in the UFSAR will not be increased. The correction of Design Document errors will have no impact upon the probability of an accident. These changes will ease and simplify fire panel maintenance activities by having the design documents which support the work, correctly reflect the operable system design configuration. The margin of safety as defined in the basis of TSs will not be reduced.
EDC	95-01071	This is a paper change only to P&IDs. This paper change is to clarify the proper train separation designator within the line number. No work is required to be done in the units.	This does not introduce an unreviewed safety question. This change does not involve a test, and does not require a change to the TSs. Since no changes are being made to any equipment as a result of this, there is no increase in the probability of a previously evaluated accident. The margin of safety as defined in the basis of TSs will not be reduced.

DOC TYPE	DOC NUMBER	DESCRIPTION	SUMMARY
EER	93-RC-128	This EER provides a repair disposition to remove the valve extension and install a valve stem nut roll pin on valve RCV-433. This valve is used to control Reactor Coolant Pump controlled seal bleed-off.	This does not introduce an unreviewed safety question. This EER does not involve a test or experiment, and does not require a change to the Technical Specifications. The repair does not increase the probability or consequences of an accident nor increase the probability or consequences of a malfunction of equipment important to safety. No new accidents or malfunctions have been created and the margin of safety, identified in the Technical Specifications Basis, has not been reduced. The safety-related isolation of bleed-off is provided by downstream valves CH-505, 506, and 507. The movement (open or closed) of the modified valve stem is not safety-related.
EER	92-CD-017	This EER installs leak seal on a bypass line drain valve located in the CD system. This work will require to drill a hole in the valve body downstream of the valve between the valve disk and the drain pipe plug.	This does not introduce an unreviewed safety question. No changes to TSs are required. The CD System function, operation and performance will not be changed in anyway. The sealing compound will be injected with pressure which is below the drain line design pressure. The sealing compound will be injected downstream of the drain valve and will not mix with condensate water supplied to the SGs. The margin of safety as defined in the basis of TSs will not be reduced.
EER	92-FP-005	Fire suppression for the charcoal filters internal spray nozzles reducers were added to outside connections to facilitate the hook up of 1-1/2" fire hose from the nearest available Fire Hose Station to supply the required water to extinguish a fire. These filters are located in the Fuel, Auxiliary, Control and Turbine buildings.	This does not introduce an unreviewed safety question. The installation of these reducers is acceptable based on the considerations of limited combustible loading of the filter units, fire characteristics of the charcoals, available detection system, NQR deluge piping, NRC and ANI acceptance of the design concept of manual fire fighting using 1-1/2" fire hose, and more water supply available than required. This change will not affect the accident analysis. The Fire Suppression system is not included in the TSs.
EER	93-EW-002	This EER adds coating to original equipment areas that were not originally coated. This proposed change will coat the following: ECWS heat exchangers, Diesel Generator Air Intercoolers, Diesel Generator Lube Oil Coolers and Diesel Generator Jacket Water Coolers tubesheets to reduce galvanic corrosion.	This does not introduce an unreviewed safety question. Operating the ECWS heat exchanger with coated tubesheets will not impact the consequences of accidents previously evaluated. Postulated radiological dose rates at the site boundary will not be increased. Malfunction of the ECWS heat exchanger from tubesheet coating or coating failure is highly unlikely. The coating is not a structural component and therefore does not have to meet ASME requirements or be seismically qualified. Therefore, operating the ECWS heat exchanger with the tubesheets coated will not increase the probability of equipment malfunction. The margin of safety as defined in the basis of TSs will not be reduced.

DOC TYPE	NUMBER	DESCRIPTION	SUMMARY
LDCP	1,2 LE-SG-178	This LDCP installs electrical conduit seal assemblies on NAMCO position limit switches for the Blowdown Line Containment Isolation Valves (CIV).	This does not introduce an unreviewed safety question. This change does not involve a test or experiment, and does not require a change to the Technical Specifications. The change does not increase the probability or consequences of an accident nor increase the probability or consequences of a malfunction of equipment important to safety. No new accidents or malfunctions have been created and the margin of safety, identified in the Technical Specifications Basis, has not been reduced. The addition of the conduit seal assemblies will prevent water/moisture intrusion to the limit switch compartment.
LDCP	1,2,3 LE-SP-067	This LDCP involves the Spray Pond Header/Bypass Valve Operators. The purpose of this LDCP is to convert these valves to manually operated valves by abandoning the motor operators in place, but retaining the maintenance tasks to preserve the gear box and its lubrication.	This does not introduce an unreviewed safety question. No changes to TSs are required. The probability or consequences of an accident previously evaluated will not be increased. The valves are locked in their position to perform their safety function, and this is not being changed. Therefore, no credit is taken for the motor operation of these valves. This change will increase the functional reliability of these valves. The margin of safety as defined in the basis of TSs will not be reduced.
LDCP	1,2,3 LJ-SF-041	This LDCP makes a change to inject a negative voltage within the non-safety related feedwater control system (FWCS) to ensure that the Economizer Valve closes when directed. This change is to compensate for potential calibration drift which may inhibit the valve from closing and cause operational concerns. This change is intended to reduce the operators' need to interface with the FWCS to control SG level.	This does not introduce an unreviewed safety question. No changes to TSs are required. The probability or consequences of an accident previously evaluated will not be increased. This change does not change the FWCS design or interface with the economizer in such a way that it could cause an increase in the likelihood of an accident. Equipment important to safety will not be affected. The margin of safety as defined in the basis of TSs will not be reduced.
LDCP	1,3 LE-CH-261	This LDCP adds a non-class Barton Flow indicator to the orifice plate in the discharge line of the charging pumps. The indicator will be permanently installed test equipment and will be isolated during normal plant operation. This ITT Barton Model 200 differential pressure is for the purpose of monitoring charging pump flow during IST testing.	This does not introduce an unreviewed safety question. The failure of the instrument or the associated tubing will not initiate any type of accident. Accidents which require boration to mitigate the consequences of an accident do not require the flow indication to be operable. A failure of the flow indication does not affect the ability of the charging pumps to add borated water to the Reactor Coolant System. HPSI and LPSI pumps can also be used for borated water injection. The margin of safety as defined in the basis of TSs will not be reduced.

DOC TYPE	DOC NUMBER	DESCRIPTION	SUMMARY
LDCP	1,2 LE-SI-202	This LDCP removes alarm functions and CSAS interface from spray chemical addition portion of the Safety Injection (SI) system. Also, this LDCP cuts and caps the discharge lines of the Spray Chemical Addition Tank (SCAT) pumps. The NRC approved a Tech Spec change to remove the spray chemical addition portion of the SI system from the PVNGS Tech Specs.	This does not introduce an unreviewed safety question. No changes to TSs are required. The only tests being performed are routine computer software verification tests, wiring verification tests, alarm window verification tests, and welding inspections. These tests do not fall into the category of tests and experiments which could degrade the margins of safety during normal operations or anticipated transients or degrade the adequacy of structures, systems, or components to prevent accidents or mitigate accident conditions. (SARCN 3381)
LDCP	1,3 LJ-GR-046	The LDCP will permanently program the high and high-high percent oxygen setpoints in oxygen analyzers 13JSSNAIT0571/0577/0583/0589. This will also include permanent setpoint calibration. The calculation requires that the high-high percent oxygen setpoint be lowered from 5% to 3.75%; this is a conservative change.	This does not introduce an unreviewed safety question. The oxygen analyzers are NQR, seismic category 3, and their failure will not impact equipment important to safety. The change will reduce the likelihood of an explosive gas mixture, and therefore, the probability of an explosive accident in the gaseous radwaste system. Technical specifications 3/4.11.2, Explosive Gas Mixture, require the reduction of the oxygen concentration and suspension of all additions of waste gases, within 6 hours, when the oxygen concentration is greater than 4% by volume. The LDCP will change the high-high oxygen alarm from 4% oxygen to 3.75% oxygen. The margin of safety as defined in the basis of TSs will not be reduced.
LDCP	1,3 LJ-GR-052	This LDCP deletes the existing gaseous radwaste compressor low suction pressure alarms, and also changes the surge tank low pressure alarm setpoint.	This does not introduce an unreviewed safety question. No changes to TSs are required. Utilizing the low surge tank pressure alarm to provide a concurrent compressor low suction pressure alarm does not increase the probability or consequences of an accident. The new low suction pressure alarm will continue to alert Operators that the compressors should be shut down. These changes do not impact the overall operation of the GR system, and therefore, do not introduce the possibility of any accident. The margin of safety as defined in the basis of TSs will not be reduced.
LDCP	1,3 LJ-SS-038	This LDCP replaces current pressure element and pressure transmitter (PE-53 & PT-53) with a diaphragm seal and pressure transmitter on the Post Accident Sampling System (PASS). This is a change to the P&IDs only.	This does not introduce an unreviewed safety question. No changes to TSs are required. The probability or consequences of an accident previously evaluated will not be increased. This change does not change, degrade, or prevent actions described or assumed in Chapters 6 or 15 of the UFSAR. This LDCP meets the design, material, and construction standards applicable to the system and is not alternating the way the system functions. The margin of safety as defined in the basis of TSs will not be reduced.

DOC TYPE	NUMBER	DESCRIPTION	SUMMARY
LDCP	1,3 LM-SG-168	This LDCP replaces hard seated Dresser check valves with soft seated Kerotest check valves. Because these valves have a history of leaking during ADV Nitrogen drop tests, the hard seats are being replaced by soft seats. ECE-SG-A077 evaluates the change from hard to soft seats and determines the conversion is acceptable. Piping specification permits the substitution of Dresser valves with Kerotest valves. This change will improve reliability of the Nitrogen supply to the ADVs.	This does not introduce an unreviewed safety question. This change will not change the accident analysis already performed. The probability or consequences of an accident previously evaluated will not be increased. Equipment important to safety will not be affected. No changes to TSs are required. The margin of safety as defined in the basis of TSs will not be reduced. The use of soft seats will provide a better sealing surface to lessen the possible effect of Nitrogen backleakage from the charged ADV accumulators, thus improving the probability of successfully completing the surveillance tests.
LDCP	1,3 LM-TB-023	This LDCP adds Service Air Injection upstream of valve LV-22 in the Cooling Tower Makeup water line to reduce cavitation, corrosion and erosion.	This does not introduce an unreviewed safety question. No changes to TSs are required. The components involved are NQR and perform no safety function. The service air system is not mentioned in any accident scenario as described in UFSAR, Chapter 15..The portion of the service air system involved with this change is located in the yard near the cooling towers and is very remote from any Q class components. The margin of safety as defined in the basis of TSs will not be reduced.
LDCP	13LM-SG-186	This LDCP installs a bypass line and a normally closed valve around the blowdown outboard containment isolation valve for filling and warming the blowdown line to minimize waterhammer when the line is returned to service.	This change does not introduce an unreviewed safety question. This change does not involve a test or experiment, and does not require a change to the Technical Specifications. The change does not increase the probability or consequences of an accident nor increase the probability or consequences of a malfunction of equipment important to safety. No new accidents or malfunctions have been created and the margin of safety, identified in the Technical Specifications Basis, has not been reduced. Admin controls will ensure that the valve remains closed when not in use.
MEE	02157	This MEE consolidates three different 6" size bellows expansion joints into one item. The substitute item is all made from 316L SS as opposed to the carbon steel flanges which were used for the original items. This consolidation was completed to reduce inventory and costs.	This does not introduce an unreviewed safety question. This change does not involve a test, and does not require a change to the TSs. The material used for the substitute expansion joint is the same, and it is not postulated that leakage or joint failure would be any different from the original. The actual deflections in the expansion joints are much less than the allowables. The margin of safety as defined in the basis of TSs will not be reduced.

DOC TYPE	DOC NUMBER	DESCRIPTION	SUMMARY
ODCR	95M-GR-001	This ODCR changes the indicated position of valve GR-V014 from "Normally Closed" to "Normally Open" on plant drawings. "Normally Open" is the correct position of the valve during operation of the Gaseous Radwaste system.	This does not introduce an unreviewed safety question. This change does not involve a test or experiment, and does not require a change to the Technical Specifications. The change does not increase the probability or consequences of an accident nor increase the probability or consequences of a malfunction of equipment important to safety. No new accidents or malfunctions have been created and the margin of safety, identified in the Technical Specifications Basis, has not been reduced. The design basis for this valve is "Normally Open" so there is no impact to any accident analysis.
PCWO	695098	This PCWO replaces a portion of the existing warming lines and associated manual isolation valves with nominal 2-inch piping and valves on the SG system. This modification is being implemented to eliminate problems of cold start. This modification will be implemented only when the unit is in Modes 5 or 6.	This does not introduce an unreviewed safety question. The probability of an accident previously evaluated will not be increased. No changes to TSs are required. This change does not introduce any new failure modes into the design of the Auxiliary Feedwater System. The margin of safety as defined in the basis of TSs will not be reduced.
PCWO	695104	This PCWO drills 3 core holes through wall barriers inside the MSSS Building to facilitate the installation of the new process pipe lines. This modification shall be performed during plant cold shutdown or refueling modes (i.e., modes 5 or 6). Proper penetration seal materials and details are used to maintain the same functional requirements for these safety-related wall barriers.	This does not introduce an unreviewed safety question. No changes to TSs are required. These penetrations will not affect the overall structural integrity of these 3'-6" thick reinforced concrete walls. Therefore, the probability of an accident previously evaluated will not be increased. In addition, proper penetration seal materials and details shall be used to meet the design requirements for these wall barriers. The margin of safety as defined in the basis of TSs will not be reduced.
PCWO	697568/697429/697558	These PCWOs install temporary data acquisition recorders in the Feedwater Control System (FWCS) and allows testing of the FWCS at power by moving the system's controller setpoint. This allows dynamic data collection from the FWCS and the SG system economizer and downcomer valves when the system is in service. The data will allow evaluation of the performance of the FWCS and the valves during power operations.	This does not introduce an unreviewed safety question. This does not require a change to the TSs. No new operating modes or failure modes are being introduced that are not bounded by the existing accident analysis. The FWCS and the SG valves are not ITS and are not credited with any safety function. This action will not increase the probability of a malfunction of equipment ITS. The margin of safety as defined in the basis of TSs will not be reduced.

DOC TYPE	DOC NUMBER	DESCRIPTION	SUMMARY
PCWO	698674/698675/695099/695100/706770	These PCWOs modified motor operators on the auxiliary feedwater system steam containment isolation valves. This increased the opening and closure times for these valves.	This does not introduce an unreviewed safety question. This change does not involve a test or experiment, and does not require a change to the Technical Specifications. The change does not increase the probability or consequences of an accident nor increase the probability or consequences of a malfunction of equipment important to safety. No new accidents or malfunctions have been created and the margin of safety, identified in the Technical Specifications Basis, has not been reduced. These valves are containment isolation valves and are normally closed. Only operator action is credited within the first 30 minutes of a steam line break or SG tube rupture event.
PROCEDURE	14AC-OFP01	This procedure, Fire System Impairment," is being revised to remove the requirement for a fire watch in the Control Room. The main Control Room is occupied 24 hours a day, therefore, a fire watch does not need to enter the Control Room envelope, Shift Supervisor's or STA offices. These areas are constantly attended and any fire or smoke conditions would be detected immediately.	This does not introduce an unreviewed safety question. No changes to TSs are required. This is not a physical change to the facility as described in UFSAR. The probability of an accident previously evaluated will not be increased. These areas are constantly attended and any fire or smoke condition would be detected immediately. Portable fire extinguishers are provided, and if appropriate, the plant Fire Department would be notified. Remote shutdown capability is provided outside the Control Room should evacuation become necessary. The margin of safety as defined in the basis of TSs will not be reduced.
PROCEDURE	14FT-9FP09	This procedure "FP Halon System surveillance," was revised to change the surveillance method to employ the magnetic heat strip method of checking the liquid level in lieu of weighing the containers.	This does not introduce an unreviewed safety question. This change does not involve a test or experiment, and does not require a change to the Technical Specifications. The probability of an accident previously evaluated in the UFSAR will not be increased. This new method will continue to ensure that the proper quantity of Halon is available for fire suppression and utilizes UL listed equipment. Safety will be enhanced by not requiring the cylinders to be moved to be weighed thus eliminating any chance of dropping the cylinder or damaging plant equipment. The liquid level will now be verified with the cylinder in place. The margin of safety as defined in the basis of TSs will not be reduced.
PROCEDURE	14FT-9FP40	This procedure has been changed to increase the inspection of the street key valve position from monthly to annually and to delete the inspection of the 2 1/2" gate valves that are found on some on-site fire hydrants. In the past 8 years, no street valves have been found out of position. Additionally, the 2 1/2" gate valves installed on some hydrants were for use by the fire brigade to control water pressure. Currently, fire fighting is performed by the Fire Department which utilizes other equipment for directing and controlling water flow. The change maintains these valves in the OPEN position at all times.	This does not introduce an unreviewed safety question. This procedure change does not involve a test or experiment, and does not require a change to the Technical Specifications. The change does not increase the probability or consequences of an accident nor increase the probability or consequences of a malfunction of equipment important to safety. No new accidents or malfunctions have been created and the margin of safety, identified in the Technical Specifications Basis, has not been reduced. Any fire that occurs will be mitigated in the same manner as before and the availability of the fire hydrants as a source of water for fire suppression will not be diminished.

DOC TYPE	DOC NUMBER	DESCRIPTION	SUMMARY
PROCEDURE	[illegible]-9FP60	This change is the cancellation of the procedure which is redundant to 14FT-9FP24, "Daily Appendix R Fire Door Position Verification."	This does not introduce an unreviewed safety question. This change does not involve a test or experiment, and does not require a change to the Technical Specifications. The change does not increase the probability or consequences of an accident nor increase the probability or consequences of a malfunction of equipment important to safety. No new accidents or malfunctions have been created and the margin of safety, identified in the Technical Specifications Basis, has not been reduced. Doors in the canceled procedure which were not in the remaining procedure were added to the remaining procedure.
PROCEDURE	14FT-OFP04	This procedure revision, "Annual Fire Water Loop Test," discusses NFPA 13A, 25,26, and 72D which includes a requirement to conduct fire sprinkler system main drain flow tests. CRDR 95-Q335 contains the justification for not conducting these tests at PVNGS. Instead, the Annual Fire Water Loop test will be revised to compensate for the elimination of the main drain tests.	This does not introduce an unreviewed safety question. This does not require a change to the TSs. This change will not increase the probability that any equipment ITS will malfunction. With the defense-in-depth fire protection features, at least one train of equipment needed for safe shutdown will remain free of fire and/or water damage. The fire suppression systems will function as before to minimize damage. The margin of safety as defined in the basis of TSs will not be reduced.
PROCEDURE	16AC-OEP01	This procedure, "Emergency Response Organization and Staffing," was cancelled. Cancelling this procedure will require a revision to the EPIPs, Section 13 and the E-Plan (page 88 of 98).	This change does not introduce an unreviewed safety question. This does not require a test or a change to the Technical Specifications. The margin of safety as defined in the basis of Technical Specifications will not be reduced. Cancellation of this procedure will not create a different type of malfunction not already analyzed in the UFSAR.
PROCEDURE	31MT-9PW01	This procedure revision provides instructions for connecting the spray pond as temporary cooling water to the NC heat exchanger. The change allows the rigging, installation and rotational testing of the pumps, but not the physical connection in Modes 1 - 4.	This does not introduce an unreviewed safety question. This change does not involve a test or experiment, and does not require a change to the Technical Specifications. The change does not increase the probability or consequences of an accident nor increase the probability or consequences of a malfunction of equipment important to safety. No new accidents or malfunctions have been created and the margin of safety, identified in the Technical Specifications Basis, has not been reduced. The installation and testing of the pumps will not affect spray pond operation.

DOC TYPE	NUMBER	DESCRIPTION	SUMMARY
PROCEDURE	31MT-9RC01, 41OP-1ZZ12	This procedure revision deletes the installation of the Refueling Pool level switches and temperature switch during U1R5 refueling activities and establishes alternative means of indication.	This does not introduce an unreviewed safety question. This procedure change does not involve a test or experiment, and does not require a change to the Technical Specifications. The change does not increase the probability or consequences of an accident nor increase the probability or consequences of a malfunction of equipment important to safety. No new accidents or malfunctions have been created and the margin of safety, identified in the Technical Specifications Basis, has not been reduced. The level limits have not changed, only the method of providing the indication and alarm function.
PROCEDURE	32DP-9ZZ12	This procedure revision reflects the results of calculation 13-EC-NA-222, Rev. 1. The component list, previously located in TSs, was transferred to this procedure - thereby, giving the responsibility of maintaining the component list to this procedure. Also, this change incorporates the changes from DMWOs that were initiated to correct deficiencies in the penetration overcurrent protection scheme. Breakers have been deleted or added as a result of the evaluation in the DMWO.	This does not introduce an unreviewed safety question. This does not require a test or a change to the TSs. The operability and function of the equipment fed by the affected circuits are unchanged. The performance of the revised system is likewise unchanged. The probability of a malfunction of equipment important to safety will not be increased. The margin of safety as defined in the basis of TSs will not be reduced.
PROCEDURE	32DP-9ZZ12	This procedure revision changes the primary containment penetration overcurrent protection device for the Unit 1 CEA penetrations. Currently, the 89 individual Heinemann AM type circuit breakers are designated as primary. The change makes the CEA subgroup Heinemann GH type circuit breakers primary. Additionally, the Hold Bus power supply breakers and fuses were added to the list of overcurrent protective devices.	This does not introduce an unreviewed safety question. This change does not involve a test or experiment, and does not require a change to the Technical Specifications. The change does not increase the probability or consequences of an accident nor increase the probability or consequences of a malfunction of equipment important to safety. No new accidents or malfunctions have been created and the margin of safety, identified in the Technical Specifications Basis, has not been reduced. The breaker curves have been analyzed in calculation 13-EC-PH-240, Revision 6.
PROCEDURE	36FT-9QK03 & 12	This procedure revision involves the test frequency extension from 12 months to an outage/refueling cycle for the Fire Detection/Protection System detectors and panels located inside containment.	This does not introduce an unreviewed safety question. This does not require a change to the TSs. This change will extend the frequency of test procedure performance. There are no physical changes being made to equipment that would increase the consequences of a malfunction of equipment ITS. The margin of safety as defined in the basis of TSs will not be reduced.

DOC TYPE	DOC NUMBER	DESCRIPTION	SUMMARY
PROCEDURE	40EP-9EO01	This new procedure replaces procedure 4XEP-XEO01, "Emergency Operation" which was based on the use of detailed flow charts. The new procedure uses an Instruction and Contingency format.	This does not introduce an unreviewed safety question. This change does not involve a test or experiment, and does not require a change to the Technical Specifications. The change does not increase the probability or consequences of an accident nor increase the probability or consequences of a malfunction of equipment important to safety. No new accidents or malfunctions have been created and the margin of safety, identified in the Technical Specifications Basis, has not been reduced. The new procedure was written using the generic guidelines of CEN-152 Revision 3, "Emergency Procedures Guidelines."
PROCEDURE	40EP-9EO03	This new procedure replaces procedure 4XEP-XRO02, "Loss of Coolant Accident" which was based on the use of detailed flow charts. The new procedure uses an Instruction and Contingency format.	This does not introduce an unreviewed safety question. This change does not involve a test or experiment, and does not require a change to the Technical Specifications. The change does not increase the probability or consequences of an accident nor increase the probability or consequences of a malfunction of equipment important to safety. No new accidents or malfunctions have been created and the margin of safety, identified in the Technical Specifications Basis, has not been reduced. The new procedure was written using the generic guidelines of CEN-152 Revision 3, "Emergency Procedures Guidelines."
PROCEDURE	40EP-9EO04	This new procedure replaces procedure 4XEP-XRO03, "Steam Generator Tube Rupture" which was based on the use of detailed flow charts. The new procedure uses an Instruction and Contingency format.	This does not introduce an unreviewed safety question. This change does not involve a test or experiment, and does not require a change to the Technical Specifications. The change does not increase the probability or consequences of an accident nor increase the probability or consequences of a malfunction of equipment important to safety. No new accidents or malfunctions have been created and the margin of safety, identified in the Technical Specifications Basis, has not been reduced. The new procedure was written using the generic guidelines of CEN-152 Revision 3, "Emergency Procedures Guidelines."
PROCEDURE	40EP-9EO07	This new procedure replaces procedure 4XEP-XRO06, "Loss of Offsite Power" which was based on the use of detailed flow charts. The new procedure uses an Instruction and Contingency format.	This does not introduce an unreviewed safety question. This change does not involve a test or experiment, and does not require a change to the Technical Specifications. The change does not increase the probability or consequences of an accident nor increase the probability or consequences of a malfunction of equipment important to safety. No new accidents or malfunctions have been created and the margin of safety, identified in the Technical Specifications Basis, has not been reduced. The new procedure was written using the generic guidelines of CEN-152 Revision 3, "Emergency Procedures Guidelines."

DOC TYPE	NUMBER	DESCRIPTION	SUMMARY
PROCEDURE	40EP-9EO09	This new procedure replaces procedure 4XEP-XRO08, "Functional Recovery Procedure" which was based on the use of detailed flow charts. The new procedure uses an Instruction and Contingency format.	This does not introduce an unreviewed safety question. This change does not involve a test or experiment, and does not require a change to the Technical Specifications. The change does not increase the probability or consequences of an accident nor increase the probability or consequences of a malfunction of equipment important to safety. No new accidents or malfunctions have been created and the margin of safety, identified in the Technical Specifications Basis, has not been reduced. The new procedure was written using the generic guidelines of CEN-152 Revision 3, "Emergency Procedures Guidelines."
PROCEDURE	40OP-9CH02	This new procedure, "Purification System," is being issued to combine the three existing procedures 4XOP-XCH02, into a common unit procedure.	This does not introduce an unreviewed safety question. This does not require a test or a change to the Technical Specifications. This procedure change makes no change to the plant operating configuration or plant equipment. The probability of a malfunction of equipment important to safety will not be increased. The margin of safety as defined in the basis of Technical Specifications will not be reduced.
PROCEDURE	40OP-9GR01	This procedure revision was revised to vent the Reactor Coolant System (RCS) during an outage condition. Specifically, this evaluation considers venting more than one source of influent simultaneously. This change also includes administrative controls to ensure an explosive mixture is not introduced into the GRS.	This does not introduce an unreviewed safety question. This does not require a change to the TSs. The influent will be sent through the GRS and directly to the atmosphere. The influent will not be directed through any other system en-route to the atmosphere. Therefore, the probability of a malfunction of equipment important to safety will not be increased. The margin of safety as defined in the basis of TSs will not be reduced.
PROCEDURE	40OP-9GS01	This new procedure, "Turbine Steam Seal and Drains (GS)," replaces procedure 4XOP-XGS01. The only change in operation of the GS system is to remove the prerequisite to have the feedwater pump turbines on the turning gear prior to GS start-up. This procedure change is primarily a format change.	This does not introduce an unreviewed safety question. This does not require a test or a change to the TSs. The change in pressures is consistent with vendor design and all system components will perform as assumed in the UFSAR analysis. The probability of a malfunction of equipment important to safety will not be increased. The margin of safety as defined in the basis of TSs will not be reduced.

DOC TYPE	DOC NUMBER	DESCRIPTION	SUMMARY
PROCEDURE	40TI-9SC01	This procedure revision allows the use of 29% ammonia pumped from 55 gallon drums and mixed with demineralized water to achieve a 0.5% by weight solution for use in demineralizer regeneration. Prior to this change, ammonium hydroxide was delivered premixed by tanker trucks.	This does not introduce an unreviewed safety question. This change does not involve a test or experiment, and does not require a change to the Technical Specifications. The change does not increase the probability or consequences of an accident nor increase the probability or consequences of a malfunction of equipment important to safety. No new accidents or malfunctions have been created and the margin of safety, identified in the Technical Specifications Basis, has not been reduced. Failure of the regen system does not impact the ability to deliver feedwater to the SG during any accident. Nor would it prevent the safe shutdown of the reactor.
PROCEDURE	40TI-9SC02	This new test procedure, "Iron Testing Across Condensate Deminerlizers," is needed to install temporary filters upstream and downstream of a Condensate Deminerlizer. The discharge from the filters will be directed to area floor drains which flow to the condensate deminerlizer high TDS sump which flows to the CWNTs. The CWNTs are monitored for radioactive material. The filters will be removed to determine the amount of iron that enters a Demineralizer and the amount of iron that is removed by a Demineralizer during plant start-up, operation, downpower, or shutdown.	This does not introduce an unreviewed safety question. This does not require a change to the TSs. The Condensate Cleanup system does not provide a safety-related function and does not affect the evaluation performed in UFSAR Section 11. There is no safety-related equipment in the vicinity of the Condensate Deminerlizers on the 100ft elevation of the turbine building, SE corner. The margin of safety as defined in the basis of TSs will not be reduced.
PROCEDURE	41AO-1ZZ57	These abnormal operating procedures address contingency actions for low voltage of offsite power related to double sequencing (until switchyard voltage is restored).	This does not introduce an unreviewed safety question. This does not require a change to the Technical Specifications. The defined actions of manually blocking the FBT remain in conformance with GDC-17. The margin of safety as defined in the basis of Technical Specifications will not be reduced.
PROCEDURE	41OP-1SG03	This procedure revision adds a new section for the feed and bleed flowpaths of the steam generators.	This does not introduce an unreviewed safety question. This does not require a test or a change to the TSs. The probability or consequences of previously evaluated accidents has not been increased. Operation of the SG Blowdown System in this configuration does not create a new accident or malfunction. The margin of safety as defined in the basis of TSs will not be reduced.

DOC TYPE	DOC NUMBER	DESCRIPTION	SUMMARY
PROCEDURE	41ST-1DG01	This procedure revises the current acceptance criteria for stabilized DG frequency from "60±1.2 Hz" to "60+.4/-.3 Hz." This a more conservative range. The use of specific M&TE increases the accuracy of the frequency measurement.	This does not introduce an unreviewed safety question. This does not require a change to the TSs. This procedure change makes no change to the plant operating configuration, plant equipment or plant operating procedures. The probability of a malfunction of equipment important to safety will not be increased. The margin of safety as defined in the basis of TSs will not be reduced.
PROCEDURE	41TP-1SG03	This procedure revision provides for the temporary installation of the BWNT chemical cleaning system for U1 SGs. This evaluation covers the cleaning process only.	This does not introduce an unreviewed safety question. This procedure does not involve a test or experiment, and does not require a change to the Technical Specifications. The procedure does not increase the probability or consequences of an accident nor increase the probability or consequences of a malfunction of equipment important to safety. No new accidents or malfunctions have been created and the margin of safety, identified in the Technical Specifications Basis, has not been reduced. Chemical cleaning of the SGs is done in Mode 4 and has minimal affect on the tubes.
PROCEDURE	41TP-1SG03, 85CP-9BT76	This procedure revision provides for the temporary installation of the BWNT chemical cleaning system for U1 SG. This evaluation covers the equipment installation only.	This does not introduce an unreviewed safety question. This procedure does not involve a test or experiment, and does not require a change to the Technical Specifications. The procedure does not increase the probability or consequences of an accident nor increase the probability or consequences of a malfunction of equipment important to safety. No new accidents or malfunctions have been created and the margin of safety, identified in the Technical Specifications Basis, has not been reduced. The cleaning equipment is on site for approximately 100 days. The connections are made in Mode 3 and the cleaning is conducted in Modes 4 and 5 after the SGs are removed from service.
PROCEDURE	42TP-2ZZ04	This new procedure, "ECCS Systems Leak Test," allows testing of the ECCS System Leakage in mode 1. This test is normally performed in Modes 5 or 6. However, this procedure was created on a temporary basis to leak test the ECCS piping (outside containment) which could be in contact with recirculation flow during a LOCA while the plant is in Mode 1.	This does not introduce an unreviewed safety question. This change does involve a test, but does not require a change to the TSs. The probability of an accident previously evaluated in the UFSAR will not be increased. The consequences of a malfunction of equipment important to safety is not increased. This test conducts the ECCS leak test as pressures are well below the design pressure of the system and uses suitable boundary isolation to preclude an interconnection between the RCS during the performance of the test. The margin of safety as defined in the basis of TSs will not be reduced.

DOC TYPE	DOC NUMBER	DESCRIPTION	SUMMARY
PROCEDURE	45OP-3ZZ12, 31MT-9RC01	These procedure revisions delete the requirement for the installation of the refueling pool level switches and temperature switches from U3R5. These changes permit the elimination of the PC system instrumentation from U3R5 and can be justified by establishing alternate level and temperature instrumentation to provide the alarm functions required by UFSAR. The first alternate is provided by establishing ERFDADS alarm setpoint of pressurizer level instrument. The second alternate is provided by establishing a PMS alarm setpoint on the refueling water level indicating system. With the removal of the refueling pool temperature switch, the required alarm function shall be provided by establishing ERFDADS on SIS shutdown cooling temperature instruments.	This does not introduce an unreviewed safety question. These procedure changes do not involve a test, and do not require a change to the TSs. Refueling pool level will continue to be monitored by 40ST-9ZZ16. The temperature and level instruments provide no safety function and do not interface directly with safety-related equipment. The margin of safety as defined in the basis of TSs will not be reduced.
PROCEDURE	4XOP-XEW01,02	This procedure revision removes the steps to place UR2 and UR3 in service and replace with direction to Radiation Monitoring Technician to perform appropriate monitoring.	This does not introduce an unreviewed safety question. No changes to TSs are required. This change will not affect the EW system's ability to perform its safety-related function. There is no new equipment malfunction risk beyond that described in the UFSAR. The margin of safety as defined in the basis of TSs will not be reduced.
PROCEDURE	70TI-1SC04	This new test procedure, "Wet Layup Piping Flush," has been issued to give directions on how to perform a flush of the secondary chemical wet layup piping to remove any remaining contamination from the SG cleaning process.	This does not introduce an unreviewed safety question. This does not require a change to the TSs. Neither the Demineralizer Water System nor the Blowdown Demineralizer System have any safety function nor do they have any safety design basis. They are not required to operate or mitigate an accident. The margin of safety as defined in the basis of TSs will not be reduced.
PROCEDURE	70TI-2SG02	This new test procedure, "Maximize Normal S/G Blowdown to the BFT," demonstrates the performance of the SG blowdown system when the normal blowdown flowrates to the Blowdown Flash Tank (BFT) are maximized and blowdown is operated in normal blowdown to the BFT on a continuous basis.	This does not introduce an unreviewed safety question. This does not require a change to the TSs. This procedure will determine if the blowdown system can be operated continuously in normal blowdown to the BFT, consistent with its original design intent, and still maintain SG water chemistry within previously determined specifications. There are no changes in instrument accuracies or response characteristics. Increasing the flowrates will not cause any system to be operated outside of its design or testing limits. The margin of safety as defined in the basis of TSs will not be reduced.

DOC TYPE	DOC NUMBER	DESCRIPTION	SUMMARY
PROCEDURE	70TI-9CH08	This new procedure "Check Valve Flow Test," will perform test instructions to collect flow and differential pressure data on the CH piping between the BAMP and the RWT. This data will be used to determine the operability of the CH-164 boration flow path through the "B" BAMP discharge check valve.	This does not introduce an unreviewed safety question. This does not involve a change to the TSs. The probability of an accident previously evaluated in the UFSAR will not be increased. Failure of equipment during the performance of this TI will not be any different than if the equipment failed during normal operations because the system line for this TI is only slightly different than that in Section 6.0 of 43OP-3CH05. The margin of safety as defined in the basis of TSs will not be reduced.
PROCEDURE	70TI-9SI02	This new procedure, "Thermal Performance Data Gathering for Shutdown Cooling Heat Exchangers," is to collect data needed to evaluate the thermal performance of the shutdown cooling heat exchangers. Temperature and flow data will be collected while operating the SI and EW systems in accordance with established system operating procedures.	This does not introduce an unreviewed safety question. This change does not involve a test or experiment, and does not require a change to the Technical Specifications. The probability of an accident previously evaluated in the UFSAR will not be increased. This procedure is performed within the bounds of established normal operating procedures with only the removal of non-safety related local temperature indicating devices that do not impact the integrity, control, or operation of the safety related SI and EW systems. There is no credible impact on any equipment important to safety. The margin of safety as defined in the basis of TSs will not be reduced.
PROCEDURE	70TP-1GT01	This procedure, "GTG Parallel Operation and Auxiliary Feedwater Pump Start," is a test that verifies proper parallel operation of GTG1 with GTG2 while isolated from offsite power and also verifies proper start of non-class 1E auxiliary feedwater pump 1M-AFN-P01 with the GTGs. This procedure only performs pre-operational testing of equipment installed (GTGs and associated equipment). This procedure is a one-time only test and does not affect any existing procedures described in the UFSAR.	This does not introduce an unreviewed safety question. No changes to TSs are required. All testing will be performed while Unit 1 is in Mode 5 or below and will not affect the train of equipment required to be operable by TSs. This test will have no affect on Unit 2 or 3 since they will be isolated from the GTGs via their respective open SBO tie breaker. This test will not cause any direct role in mitigating radiological consequences of an accident nor will it negatively affect any fission produce barriers. The margin of safety as defined in the basis of TSs will not be reduced.
PROCEDURE	70TP-2GT01	This procedure, "Unit 2 Station Blackout DCP Switchgear Test," will perform pre-operational testing of equipment installed per DCP 2PE-XE-004. This procedure verifies proper operation of SBO modifications at bus 2E-NAN-S03.	This does not introduce an unreviewed safety question. No changes to TSs are required. All equipment affected will be on the A Train and inoperable during this test. Unit 2 will be shut down and the A Train will not be required to be operable for TS compliance. This test will not degrade the operation of the safety related equipment and does not have any affect on any assumptions made during the evaluations of radiological consequences of accidents described in the UFSAR. The margin of safety as defined in the basis of TSs will not be reduced.

DOC TYPE	DOC NUMBER	DESCRIPTION	SUMMARY
PROCEDURE	70TP-2GT02	This procedure, "GTG Parallel Operation with Non-Class 1E Loads," is a test that verifies proper parallel operation of GTG 1 with GTG 2 while isolated from offsite power. This test will be performed with the vendor (Solar Turbine) to correct the instability problems encountered in Unit 1 testing with the GTGs in parallel.	This does not introduce an unreviewed safety question. No changes to TSs are required. The procedure will test the GTG and demonstrate its capability to supply an AAC power source during an SBO. Since the test will be performed when the availability of the Train A ESF power is not required, the test will not degrade the operation of the safety-related equipment and does not have any affect on any assumptions made during the evaluations of radiological consequences of accidents described in the UFSAR. The margin of safety as defined in the basis of TSs will not be reduced.
PROCEDURE	70TP-3SG01	This new procedure was written to install one or more clamps on the U3, SG1, line 2 main steam line to temporarily alter its resonant frequency. This procedure will enable data gathering (vibration and noise readings) to ascertain if the added weight will dampen the noise and vibration. This requires a temporary test to be performed.	This does not introduce an unreviewed safety question. This does not require a change to the TSs. Adding pipe clamps for the purpose of dampening vibration levels and noise does not violate the functional design or performance of the system. Piping and support design basis will also be maintained as there is no increase in the changes of a single failure due to the pipe clamps. The margin of safety as defined in the basis of TSs will not be reduced.
PROCEDURE	73DP-9XI01	This new procedure addresses moving the pump and valve component tables, along with the supporting notes, definitions, etc. from the IST Program procedures to this new procedure.	This does not introduce an unreviewed safety question. This does not require a change to the TSs. This does not create the possibility of a different type of accident than those already evaluated in the UFSAR. The margin of safety as defined in the basis of TSs will not be reduced.
PROCEDURE	73ST-1DG01	This procedure revision, "Class 1E Diesel Generator and Integrated Safeguards Surveillance Test" incorporates lessons learned from Unit outages. These changes include plant lineups utilizing the Low Pressure Safety Injection pump for Shutdown Cooling, adding requirements to Shutdown Spray Pond pump and DG exhaust fans prior to SIAS/CIAS/LOP, added DG 24-hour run hook-ups, added Spray Pond Exhaust fan to verifications, added verification of ESF relay closure, added steps to prevent unneeded Essential Chiller starts, and added an option not to rotate Containment Spray flange.	This does not introduce an unreviewed safety question. This does not require a change to the Technical Specifications. The change does not increase the probability or consequences of an accident nor increase the probability or consequences of a malfunction of equipment important to safety. No new accidents or malfunctions have been created and the margin of safety, identified in the Technical Specifications Basis, has not been reduced. Testing is performed in Modes 5 and 6, one train at a time, when equipment under test is not required to be operable.

DOC TYPE	NUMBER	DESCRIPTION	SUMMARY
PROCEDURE	73ST-1DG02	This procedure revision, "Class 1E Diesel Generator and Integrated Safeguards Surveillance Test" incorporates lessons learned from Unit outages. These changes include plant lineups utilizing the Low Pressure Safety Injection pump for Shutdown Cooling, adding requirements to Shutdown Spray Pond pump and DG exhaust fans prior to SIAS/CIAS/LOP, added DG 24-hour run hook-ups, added Spray Pond Exhaust fan to verifications, added verification of ESF relay closure, added steps to prevent unneeded Essential Chiller starts, and added an option not to rotate Containment Spray flange.	This does not introduce an unreviewed safety question. This does not require a change to the Technical Specifications. The change does not increase the probability or consequences of an accident nor increase the probability or consequences of a malfunction of equipment important to safety. No new accidents or malfunctions have been created and the margin of safety, identified in the Technical Specifications Basis, has not been reduced. Testing is performed in Modes 5 and 6, one train at a time, when equipment under test is not required to be operable.
PROCEDURE	73ST-2DG01	This procedure revision, "Class 1E Diesel Generator and Integrated Safeguards Surveillance Test," is a general revision, including lessons learned from the last 3 outages. Major procedure changes include plant lineups utilizing LPSI pump for Shutdown Cooling, adding an Appendix for Emergency recovery test, deleted Appendix K, adding a new page to Appendix I for the DG 24-hour run hook ups and more.	This does not introduce an unreviewed safety question. No changes to TSs are required. The testing is performed during Modes 5 and 6 and none of the equipment under test is required to be operable. The equipment under test is not required to be operable at the time of the testing and each safety related train is completely independent and isolated from each other, therefore the probability of a malfunction of equipment important to safety is not increased. The margin of safety as defined in the basis of TSs will not be reduced.
PROCEDURE	73ST-2DG02	This procedure revision, "Class 1E Diesel Generator and Integrated Safeguards Surveillance Test," is a general revision which includes lessons learned from the last 3 outages. The major procedure changes include plant lineups utilizing LPSI pump for Shutdown Cooling, adding an appendix for emergency recovery test, deleting Appendix K, adding a new page to Appendix I for the DG 24-hour run hook ups, and more.	This does not introduce an unreviewed safety question. No changes to TSs are required. The testing is performed during Modes 5 and 6 and none of the equipment under test is required to be operable. The equipment under test is not required to be operable at the time of the testing and each safety related train is completely independent and isolated from each other, therefore the probability of a malfunction of equipment important to safety is not increased. The margin of safety as defined in the basis of TSs will not be reduced.
PROCEDURE	73ST-3DG01, 02	These procedure revisions allow installation of test cables/terminations and the performance of recorder verifications in plant Modes 3-6. This change will shorten the outage duration.	This does not introduce an unreviewed safety question. This does not require a change to the TSs. The probability of an accident previously evaluated will not be reduced. The method that the test cable terminations are installed ensures that no Class 1E circuits can be degraded. The margin of safety as defined in the basis of TSs will not be reduced.

DOC TYPE	C NUMBER	DESCRIPTION	SUMMARY
PROCEDURE	73ST-9ZZ18	This procedure, "MSSV Set Pressure Verification," will perform on-line MSSV testing, using the Furmanite/Trevitest auxiliary lift device at 100% power (valve operable) instead of at 98.2% power (valve operable). The MSSV testing conducted is not discussed in the UFSAR.	This does not introduce an unreviewed safety question. No changes to TSs are required. The valves will still operate to relieve secondary side steam generator pressure in the occurrence of an event. The MSSVs have been previously on-line tested at 98.2% power using the same method that was used to test at 100% power. Therefore, there will be no change in normal operations. While in the test, the MSSV will still be capable of performing its safety function of relieving secondary side pressure, therefore the consequences of a malfunction previously evaluated of equipment important to safety will not be increased. The margin of safety as defined in the basis of TSs will not be reduced.
PROCEDURE	73TI-9CH01	This procedure revision discusses the letdown isolation valve closure test to verify the ability to isolate letdown. This revision adds a section to retest the valve at a higher letdown flow rate if it should fail the original test.	This does not introduce an unreviewed safety question. This does not require a change to the TSs. The safety function of the valves to be tested is to close and isolate letdown. The test will manually close the valves - this is placing the valves in their safety position for accident mitigation. The margin of safety as defined in the basis of TSs will not be reduced.
PROCEDURE	74AC-9CY04	This procedure has been revised to implement boron-lithium chemistry guidelines based on the EPRI PER Primary Water Chemistry Guidelines, Revision 2. The program change includes the required material and fuel surveillance program evaluations.	This does not introduce an unreviewed safety question. This procedure change does not involve a test or experiment, and does not require a change to the Technical Specifications. The change does not increase the probability or consequences of an accident nor increase the probability or consequences of a malfunction of equipment important to safety. No new accidents or malfunctions have been created and the margin of safety, identified in the Technical Specifications Basis, has not been reduced. The threshold for accelerated attack of zircaloy is approximately 35 ppm lithium. The change makes the upper limit 3.00 ppm at Hot Full Power and 5.72 at Hot Zero Power.
PROCEDURE	74RM-9EF20	This procedure revision deleted the requirement for obtaining particulate, iodine, and tritium samples from the Waste Decay Tanks.	This does not introduce an unreviewed safety question. This change does not involve a test or experiment, and does not require a change to the Technical Specifications. The change does not increase the probability or consequences of an accident nor increase the probability or consequences of a malfunction of equipment important to safety. No new accidents or malfunctions have been created and the margin of safety, identified in the Technical Specifications Basis, has not been reduced. This change does not affect the limiting accident and Technical Specifications still require that the quantity of radioactivity in each gas storage tank be limited to 170,000 curies of noble gas. Sampling will be maintained at the plant vent.

DOC TYPE	DOC NUMBER	DESCRIPTION	SUMMARY
PROCEDURE	74TI-1SC05	This new procedure, "Carbohydrazide use in Secondary Systems," gives instructions for the use of carbhydrazide in low power operations. Material comparability was reviewed and no computability concerns were identified.	This does not introduce an unreviewed safety question. This change does not involve a test or experiment, and does not require a change to the Technical Specifications. The change does not increase the probability or consequences of an accident nor increase the probability or consequences of a malfunction of equipment important to safety. No new accidents or malfunctions have been created and the margin of safety, identified in the Technical Specifications Basis, has not been reduced. At low temperatures, corrosion rates are expected to decrease. At temperatures above 275 degrees Fahrenheit, carbohydrazide produces CO2 and hydrazine.
PROCEDURE	74TI-9SC07	This procedure, "Nitrogen Spragging of the Condenser," determines the effectiveness of injecting low pressure nitrogen into the condenser. The nitrogen gas will displace/flush oxygen from condenser space and will help reduce dissolve oxygen levels in the condensate system water.	This does not introduce an unreviewed safety question. No changes to TSs are required. Condenser, AR, and plant nitrogen systems will be operated within design limits specified in the UFSAR. The probability or consequences of an accident previously evaluated will not be increased. The margin of safety as defined in the basis of TSs will not be reduced.
PROCEDURE	74TI-9SC08	This new test instruction procedure installs new resin traps, with finer screens, in place of the existing resin traps. Installing new traps involves replacing an internal piping component, there is no change to any piping and no hydraulic tests are required to restore the system to service. Prior to returning the trap to service, an in-service leak test will be performed.	This does not introduce an unreviewed safety question. Installing new Condensate Demineralizer Resin Traps does not increase the probability of a malfunction of equipment ITS. No credit was taken for the condensate cleanup system in Chapter 6. The margin of safety as defined in the basis of TSs will not be reduced.
PROCEDURE	74TI-9SC09	This new procedure, "Carbohydrazide Use in Secondary Systems," details the use of carbohydrazide in secondary systems as an alternative to hydrazine, including monitoring the effectiveness in controlling corrosion product transport, and on ECP, in layup, and low power operation to 30%, and normal operation above 30% power.	This change does not introduce an unreviewed safety question. This does not require a test or a change to the TSs. The consequences of an accident previously evaluated will not be increased since the use of carbohydrazide will improve the corrosion control of the secondary systems. Carbohydrazide has no toxicity limits/requirements, is safe to handle, and it is not detrimental to plant materials. The margin of safety as defined in the basis of TSs will not be reduced.

DOC TYPE	DOC NUMBER	DESCRIPTION	SUMMARY
PROCEDURES	14FT-9FP05 & 14FT-9FP46	This procedure 14FT-9FP05 is being cancelled and procedure 14FT-9FP46 is being revised as follows: "18 Month Deluge System Spray Nozzle Inspection," is being revised to delete the system in the "dead space compartment" between the Auxiliary and Control buildings.	This does not introduce an unreviewed safety question. This change does not involve a test or experiment, and does not require a change to the Technical Specifications. The change does not increase the probability or consequences of an accident nor increase the probability or consequences of a malfunction of equipment important to safety. No new accidents or malfunctions have been created and the margin of safety, identified in the Technical Specifications Basis, has not been reduced.
Reload Analysis	Unit 2 Cycle 6	This reload consists of a new core design with 60 new fuel assemblies and 181 previously burned fuel assemblies. In addition to the core design, the U2C6 fuel assemblies contain GUARDIANä grid, HID-1L Spacer Grid, new plenum spring with no spacer disk and Erbium, an IFBA.	This does not introduce an unreviewed safety question. This change does not involve a test or experiment, and does not require a change to the Technical Specifications. The change does not increase the probability or consequences of an accident nor increase the probability or consequences of a malfunction of equipment important to safety. No new accidents or malfunctions have been created and the margin of safety, identified in the Technical Specifications Basis, has not been reduced.
SARCN	3222	This SARCN deletes the nitrogen bladder fittings as missile sources.	This does not introduce an unreviewed safety question. This does not require a change to the Technical Specifications. The margin of safety as defined in the basis of Technical Specifications will not be reduced.
SARCN	3379	This SARCN revises the description of the condensate low level alarms.	This does not introduce an unreviewed safety question. This does not require a change to the Technical Specifications. The margins in this case provide conservatism to the established setpoints and their relationship with the process design limit. The margin of safety as defined in the basis of Technical Specifications will not be reduced.

DOC TYPE	DOC NUMBER	DESCRIPTION	SUMMARY
SARCN	[illegible]	This SARCN removes the Iodine Removal System alarms and the automatic actuation due to an approved TS change.	This does not introduce an unreviewed safety question. This does not require a change to the Technical Specifications. The probability or consequences of an accident previously evaluated will not be increased. The margin of safety as defined in the basis of Technical Specifications will not be reduced. (LDCP 1,3LE-SI-202)
SARCN	3383	This SARCN corrects the UFSAR description to be consistent with the Gaseous Radwaste system capability. The GRS description in Section 11.3.1.1.6 is not consistent with the system physical layout. This is only a paper change since the physical plant configuration meets the intent of SRP 11.3 guidelines.	This does not introduce an unreviewed safety question. As stated in the SER, Section 11.2.2.8, NRC staff concluded that "the GRS capacity and design criteria, along with the design provisions incorporated to reduce the potential for hydrogen explosion, to be acceptable." PVNGS fully meets the requirements of SRP (NUREG 75/087) Section 11.3.II.6.b. GRS operational procedures are not affected and sections of the UFSAR describing procedures were reviewed (Chapters 5, 6, 9, 13, 14) and no changes were identified.
SARCN	3391, R1	This SARCN deletes the commitment to IEEE 450-1980 to size the Class 1E batteries 25% greater than required which allowed battery replacement criteria of 80% rated capacity. The old Exide batteries are being replaced with AT&T.	This does not introduce an unreviewed safety question. This does not require a change to the Technical Specifications. The probability or consequences of an accident previously evaluated will not be increased. The margin of safety as defined in the basis of Technical Specifications will not be reduced.
SARCN	3397	This SARCN deletes the statement that the domestic water system flushing system piping is stainless steel and the hypochlorite piping is carbon steel.	This does not introduce an unreviewed safety question. The probability or consequences of an accident previously evaluated will not be increased. This does not require a change to the Technical Specifications. The margin of safety as defined in the basis of Technical Specifications will not be reduced.

DOC TYPE	NUMBER	DESCRIPTION	SUMMARY
SARCN	3425	This SARCN revises the fire protection section to reflect the addition of the methane gas pipe in the auxiliary building.	This does not introduce an unreviewed safety question. This does not require a change to the Technical Specifications. The probability or consequences of an accident previously evaluated will not be increased. The margin of safety as defined in the basis of Technical Specifications will not be reduced. (DCP 1,3 XJ-GR-046)
SARCN	3439	This SARCN adds a positive turbine trip after power/load unbalance.	This does not introduce an unreviewed safety question. This does not require a change to the Technical Specifications. The probability or consequences of an accident previously evaluated will not be increased. The margin of safety as defined in the basis of Technical Specifications will not be reduced.
SARCN	3446	This SARCN revises the description of the carpeting in the control room to include resilient floor covering and ASTM E648.	This does not introduce an unreviewed safety question. All materials, whether resilient floor coverings or carpeting, must meet established acceptance criteria. The probability of a fire in the Control Room as a result of flooring material is almost nonexistent since the materials used are required by the design specification to meet the fire criteria. The probability of an accident previously evaluated is not increased. No changes to TSs are required.
SARCN	3449, R1	This SARCN deletes the adjective, "1-hour" from descriptions of fire barriers used for Reg. Guide 1.75 separation.	This does not introduce an unreviewed safety question. This does not require a change to the Technical Specifications. The probability or consequences of an accident previously evaluated will not be increased. The margin of safety as defined in the basis of Technical Specifications will not be reduced.

DOC TYPE	DOC NUMBER	DESCRIPTION	SUMMARY
SARCN	3458	This SARCN deletes pH requirements from the UFSAR, uses Post-LOCA H2 monitors in lieu of sampling for containment atmosphere hydrogen, delete RCS dissolved O2 and use calculation for RWT, SI and sumps, also delete containment building radwaste sumps as the mandatory sample point.	This does not introduce an unreviewed safety question. This does not require a test or a change to the TSs. This change improves the oxygen sensitivity thus does not increase the probability of an equipment malfunction. The PASS does not perform any safety related functions associated with plant shutdowns. The margin of safety as defined in the basis of TSs will not be reduced.
SARCN	3459	This SARCN revises the UFSAR to update applicable sections with the new oversight organization structure. This change is editorial in nature.	This UFSAR change is editorial in nature.
SARCN	3466	This SARCN raises the low level alarm setpoint of the essential spray ponds to ensure that the alarm is received prior to reaching the technical specification limit taking into account instrument uncertainty.	This does not introduce an unreviewed safety question. The essential spray ponds are not accident initiators; rather, they are accident mitigators. These changes ensure that the water in inventory, assumed for a design basis accident, is present. The essential spray ponds (ultimate heat sink) would perform their safety function during an accident with no increase in consequences. The changes made were in a conservative direction. Raising the maximum static water level does not challenge the spray pond structure. The spray ponds could be filled to the top of the walls with no impact on the wall loading analysis. The margin of safety as defined in the basis of TSs will not be reduced.
SARCN	3468	This SARCN updates the UFSAR to close out the Design Basis Action Item AF-A006 for the AF System.	This does not introduce an unreviewed safety question. No changes to TSs are required. The probability or consequences of an accident previously evaluated will not be increased. The margin of safety as defined in the basis of TSs will not be reduced.

DOC TYPE	C NUMBER	DESCRIPTION	SUMMARY
SARCN	3477	This SARCN revises the variable overpower trip setpoint in accordance with recently approved TS Amendment.	This does not introduce an unreviewed safety question. No changes to TSs are required. The probability or consequences of an accident previously evaluated will not be increased. The margin of safety as defined in the basis of Technical Specifications will not be reduced.
SARCN	3486	This SARCN incorporates the safety analysis changes due to U3C5 and the safety analysis basis documents.	This does not introduce an unreviewed safety question. The probability of an accident previously evaluated will not be increased. The probability or consequences of an accident previously evaluated will not be increased. The margin of safety as defined in the basis for TSs will not be reduced.
SARCN	3491	This SARCN discusses re-rating the existing gypsum board barriers (located in the Control Building, el. 120, between the inverter, communications, and lower cable spreading room) from Appendix A, 2-hour, to Appendix A, 1-hour. These barriers are only one layer of gypsum board and do not meet the 2-hour barrier requirement.	This does not introduce an unreviewed safety question. No changes to TSs are required. This evaluation determined that an appropriate and acceptable level of protection is maintained by reclassifying the subject barriers to a 1-hour rating. A postulated fire will have no credible method of impacting the ability of the plant to achieve or maintain safe shutdown based on this 1-hour rating. The margin of safety as defined in the basis of TSs will not be reduced.
SARCN	3492	This SARCN revises the failure mode shown for valves SGB-UV-130, 135, and SGA-UV-172, 175.	This does not introduce an unreviewed safety question. No changes to TSs are required. The probability or consequences of an accident previously evaluated will not be increased. The margin of safety as defined by TSs will not be reduced. (SEE DCP 1,3 XS-SG-164)

DOC TYPE	DOC NUMBER	DESCRIPTION	SUMMARY
SARCN	3502	This SARCN revises exceptions to Reg. Guide 1.88 to reflect new records that the storage facility does not use Halon & also uses a different flooring tile that does not contain asbestos.	This does not introduce an unreviewed safety question. This does not require a change to the TSs. The probability or consequences of an accident previously evaluated will not be increased. The margin of safety as defined in the basis of TSs will not be reduced.
SARCN	3503	This SARCN adds a PVC jacket on flexible conduits to the list of applications of PVC in UFSAR Table 9B.3-1, Section D.2c. This change was made to more accurately document the plant configuration.	This does not introduce an unreviewed safety question. No changes to TSs are required. The small amounts of combustible PVC jacket material on the flexible conduits are passive and will not increase the probability or consequences of an accident previously evaluated. The probability of a malfunction of equipment important to safety will not be increased. This change is passive and does not introduce any probability of equipment malfunction. It only justifies the existence of small quantities of PVC plastic jacket material on flexible conduits. The margin of safety as defined in the basis for any TSs is not reduced.
SARCN	3504	This SARCN deletes the manual hose station and fire extinguisher located in Fire Zone 39A, 88' elevation pipeway in the Auxiliary Building.	This does not introduce an unreviewed safety question. This does not require a change to the Technical Specifications. The probability or consequences of an accident previously evaluated will not be increased. The margin of safety as defined in the basis of Technical Specifications will not be reduced.
SARCN	3505	This SARCN was written to replace 2 dry chemical portable extinguishers with 3 CO2 portable extinguishers in Fire Zone 29A in all units. This change is being made to address potential spent fuel pool contamination due to the discharge of the installed dry chemical portable fire extinguishers on the 140' of the Fuel Building of each unit.	This does not introduce an unreviewed safety question. There is not a concern for equipment installed in the area. The probability of an accident previously evaluated will not be increased. Fire Protection Engineering has reviewed NFPA-10 and determined that, based on the low fire loading CO2 extinguishers, used in conjunction with readily accessible water-based fire protection, would be acceptable for Class A fires. The margin of safety as defined in the basis of TSs will not be reduced.

DOC TYPE	NUMBER	DESCRIPTION	SUMMARY
SARCN	3506	This SARCN revises the moment and shear values shown for the DG building exterior wall.	This does not introduce an unreviewed safety question. This does not require a change to the Technical Specifications. The probability or consequences of an accident previously evaluated will not be increased. The margin of safety as defined in the basis of Technical Specifications will not be reduced.
SARCN	3509	This SARCN reflects added temperature indicators and switches.	This does not introduce an unreviewed safety question. No changes to TSs are required. The probability or consequences of an accident previously evaluated will not be increased. The margin of safety as defined by TSs will not be reduced. (SEE DCP 1,2,3 XJ-HJ-056)
SARCN	3510	This SARCN replaces the control room HVAC capability shown in Section 6.4.3.c with a reference to Table 9.4-3.	This does not introduce an unreviewed safety question. The probability of an accident previously evaluated will not be increased. This does not reduce the margin of safety as defined in the basis of TSs.
SARCN	3512 & 3513	This DCP makes changes to the secondary sampling system by redesigning the auxiliary building cold lab and wet racks, replacing, relocating, and adding analyzers, changing the interface with the Micomax computer system, and connecting non-Class 1E UPS power to the auxiliary building cold lab computer.	This does not introduce an unreviewed safety question. This change does not involve a test or experiment, and does not require a change to the Technical Specifications. The change does not increase the probability or consequences of an accident nor increase the probability or consequences of a malfunction of equipment important to safety. No new accidents or malfunctions have been created and the margin of safety, identified in the Technical Specifications Basis, has not been reduced. The Secondary Chemical Control System is not safety-related and performs no safety function. (SEE DCP 13-PJ-SC-136)

DOC TYPE	DOC NUMBER	DESCRIPTION	SUMMARY
SARCN	3514	This SARCN extends the frequency of testing for PVNGS fire detection/suppression detectors and associated fire panels from six months to twelve months. The new NFPA Standards now allow the interval for testing to be extended to twelve months. A CRDR has provided procedure testing work order history data for each test procedure to substantiate that there has been a minimal amount of detector and/or panel testing failures over the last two and one half years.	This does not introduce an unreviewed safety question. The probability or consequences of an accident previously evaluated will not be increased. The TSs are not affected by this change. Equipment important to safety will not be affected. This change has no impact on the probability of the event of a fire causing a malfunction of equipment important to safety. The margin of safety as defined in the basis of TSs will not be affected.
SARCN	3516	This SARCN reflects the addition of the boric acid skid to the secondary system.	This does not introduce an unreviewed safety question. This does not require a change to the Technical Specifications. The margin of safety as defined in the basis of Technical Specifications will not be reduced. (DCP 13PM-SC-147)
SARCN	3517	This SARCN takes an ion exchanger removed in 1989 from Unit 1 CVC, rebuilds the internals, and reinstalls it to replace the current ion exchanger (CHND01B) which has failed the retention element. The main difference between the two designs was the filtering capability.	This does not introduce an unreviewed safety question. No changes to TSs are required. The probability or consequences of an accident previously evaluated will not be increased because the subject change meets the design, material, and construction standards applicable to the system. Also, the change does not have any impact on the overall system performance in a manner which could increase the occurrence probability of an accident. The margin of safety as defined in the basis of TSs will not be reduced.
SARCN	3521	This SARCN revises the MOV ratings shown on Tables 8.3-1 and 8.3-3.	This does not introduce an unreviewed safety question. This does not require a change to the Technical Specifications. The margin of safety as defined in the basis of Technical Specifications will not be reduced.

DOC TYPE	DOC NUMBER	DESCRIPTION	SUMMARY
SARCN	3523	This SARCN reflects the chromatograph to monitor the condensate demineralizer service vessels. The SSM and the computer allow the IC to monitor the effluent of each demineralizer continuously for sodium, sulfate, and chloride ions without an operator present. This change expands the capability to conduct analyses of specific ions in the effluent of each condensate demineralizer and to help reduce the number of steam generator tube failures by reducing the impurities entering the SGs. Waste from the IC will be routed to the south condenser area sump. (Unit 1).	This does not introduce an unreviewed safety question. No changes to TSs are required. The probability or consequences of an accident previously evaluated will not be increased because the subject change meets the design, material, and construction standards applicable to the system. Also, the change does not have any impact on the overall system performance in a manner which could increase the occurrence probability of an accident. The margin of safety as defined in the basis of TSs will not be reduced.
SARCN	3526	This SARCN revises release limits to evaporation ponds to reflect ODCM Rev. 9. This change distinguishes between the releases to the CWS and releases to the evaporation ponds. The release limits for discharges to the CWS will be more restrictive. The release limits for discharges to the evaporation ponds will be less restrictive.	This does not introduce an unreviewed safety question. No changes to TSs are required. The probability or consequences of an accident previously evaluated will not be increased. No safety-related equipment will not be affected. The margin of safety as defined in the basis of TSs will not be reduced.
SARCN	3527	This SARCN revises Section 12.5.3.1 to require routine air monitoring rather than air sampling of accessible portions of controlled areas. This change only modifies a radiation protection survey technique and therefore, has no impact on the physical configuration of the facility. However, implementing procedure 75RP-ORP02, "Radiological Survey Schedule," will be revised to discontinue random grab air sampling in lieu of continuous air monitoring via RMS.	This does not introduce an unreviewed safety question. No changes to TSs are required. This change only affects routine airborne radioactivity sampling performed at predetermined frequencies under normal operating conditions. This change does not require RMS to be utilized beyond its design capacity and therefore, would not provide for any consequences beyond what has been previously evaluated. The margin of safety as defined in the basis of TSs will not be reduced.
SARCN	3529	This SARCN clarifies the UFSAR to ensure sources for reactor trip signals are consistent with the existing safety analysis basis document (SABD).	This does not introduce an unreviewed safety question. No changes to TSs are required. All the accident assumptions and initiating events are not affected by this change. The accident chronology is clarified/corrected to more accurately match the results in the existing SABD. The margin of safety as defined in the basis of TSs will not be reduced.

DOC TYPE	DOC NUMBER	DESCRIPTION	SUMMARY
SARCN	[illegible]	This SARCN reflects that the administrative buildings A, B, & C no[illegible]ontain space for the new record storage facility and control room simulator. These changes are editorial in nature.	This does not introduce an unreviewed safety question. This does not re[illegible]e a change to the Technical Specifications. The probability or consequences of an accident previously evaluated will not be increased. The margin of safety as defined in the basis of Technical Specifications will not be reduced.
SARCN	3532	This SARCN is an editorial change missed by SARCN 3483.	This does not introduce an unreviewed safety question. This does not require a change to the Technical Specifications. The probability or consequences of an accident previously evaluated will not be increased. The margin of safety as defined in the basis of Technical Specifications will not be reduced.
SARCN	3535	This SARCN replaces "No exception taken" with "In place testing of carbon absorber units will confirm bypass and penetration leakage up to 1% for 3 buildings listed in Table." Table 1.8-3.	This does not introduce an unreviewed safety question. This does not require a change to the Technical Specifications. The margin of safety as defined in the basis of Technical Specifications will not be reduced. (SEE CRDR 940612)
SARCN	3539	This SARCN deletes applicable wording in the FSAR. This is based on the deletion of the Mechanical EQ portion from the EQ Program.	This does not introduce an unreviewed safety question. No changes to TSs are required. The probability or consequences of an accident previously evaluated will not be increased. Equipment important to safety will not be affected. The margin of safety as defined in the basis of TSs will not be reduced.

DOC TYPE	NUMBER	DESCRIPTION	SUMMARY
SARCN	3540	This SARCN changes the description of the DG Starting Air Compressor which was replaced with a different type. The results are that the charging time is slightly longer than the time identified in the UFSAR (31 to 36 min verses 30 min). This SARCN changed the charging time in the UFSAR to "approximately 30 minutes" from "30 minutes."	This does not introduce an unreviewed safety question. This change does not involve a test or experiment, and does not require a change to the TSs. The change does not increase the probability or consequences of an accident nor increase the probability or consequences of a malfunction of equipment important to safety. No new accidents or malfunctions have been created and the margin of safety, identified in the TSs Basis, has not been reduced. The ability of the DG to start within 10 seconds is determined by the amount of air in the receiver. The minimum required for a 10 second start is 175 psig. The pressure is maintained between 240 and 250 psig with a low alarm at 185 psig. These parameters ensure there is sufficient air volume to perform the function. (SEE DCP 1 PM-DG-071)
SARCN	3541R1	This SARCN revises Section 1.8, RG 1.143 position on pressure testing of Gaseous Radwaste piping. This change adds the term pneumatic pressure testing.	This does not introduce an unreviewed safety question. This change does not involve a test or experiment, and does not require a change to the Technical Specifications. The change does not increase the probability or consequences of an accident nor increase the probability or consequences of a malfunction of equipment important to safety. No new accidents or malfunctions have been created and the margin of safety, identified in the Technical Specifications Basis, has not been reduced. This change allows pneumatic testing of gaseous radwaste piping in lieu of hydrostatic testing.
SARCN	3544	This SARCN reflects changes to the RP Department due to re-engineering, and also reflects the new radiation monitoring instruments and WBC calibration.	This does not introduce an unreviewed safety question. This does not require a change to the TSs. The probability or consequences of an accident previously evaluated will not be increased. The margin of safety as defined in the basis of Technical Specifications will not be reduced.
SARCN	3545	This SARCN is in regards to the Co2 odorizing system function.	This does not introduce an unreviewed safety question. This does not require a change to the Technical Specifications. The probability or consequences of an accident previously evaluated will not be increased. The margin of safety as defined in the basis of Technical Specifications will not be reduced.

DOC TYPE	DOC NUMBER	DESCRIPTION	SUMMARY
SARCN	3549	Editorial changes. Replace Table 11.5-3 with Table similar to ODCM Table 3-1.	This change does not introduce an unreviewed safety question. This does not require a change to the Technical Specifications. The probability of an accident previously evaluated will not be increased. The margin of safety as defined in the basis of Technical Specifications will not be reduced.
SARCN	3550	This SARCN is the third and final phase of the Station Blackout (SBO) Gas Turbine Generator (GTG) Project to provide an Alternate Alternating Current (AAC) power source.	This does not introduce an unreviewed safety question. This does not require a change to the Technical Specifications. The probability or consequences of an accident previously evaluated will not be increased. The margin of safety as defined in the basis of Technical Specifications will not be reduced. (DCP 1,2,3 PE-XE-004)
SARCN	3551	EDITORIAL. This SARCN clarifies the radiation monitor system performance and corrects inconsistencies.	This does not introduce an unreviewed safety question. This does not require a change to the Technical Specifications. The probability or consequences of an accident previously evaluated will not be increased. The margin of safety as defined in the basis of Technical Specifications will not be reduced.
SARCN	3553	This SARCN changes the table to reflect more conservative displayed accuracies of the aux. feedwater pump discharge pressure indicators.	This does not introduce an unreviewed safety question. This change does not involve a test or experiment, and does not require a change to the Technical Specifications. The probability of an accident previously evaluated in the UFSAR will not be increased. The margin of safety as defined in the basis of TSs will not be reduced.

DOC TYPE	DOC NUMBER	DESCRIPTION	SUMMARY
SARCN	3555	This SARCN reflects changes to the reconfiguration of the sample line dedicated to the boronmeter and PRM of the letdown line. CESSAR 9.3.4 also affected.	This does not introduce an unreviewed safety question. The consequences of an accident previously evaluated will not be increased. No credit is taken to mitigate the consequences of the studied events by using the information obtained through trending the reactor coolant activity. Early detection of any fuel cladding fracture will not prevent or reduce the occurrence probability of any of the studies events relevant to PVNGS. Reconfiguring the sample line will not impede the function of any safety-related system or component . The margin of safety as defined in the basis of TSs will not be reduced. (DCP 1,2,3 PJ-SQ-001)
SARCN	3556	This SARCN is based on the use of detailed flow charts. The EOP flowcharts will be removed.	This does not introduce an unreviewed safety question. This does not require a change to the Technical Specifications. The probability or consequences of an accident previously evaluated will not be increased. The margin of safety as defined in the basis of Technical Specifications will not be reduced. (PROCEDURE 40EP-9EO01)
SARCN	3557	This SARCN revises table 9B.3-1 to reflect the new method of verifying weight of Halon in cylinders (i.e., use a magnetic heat strip applied directly to cylinder). Also revises Section 13.5 which references former TS provisions.	This does not introduce an unreviewed safety question. This does not require a change to the Technical Specifications. The probability or consequences of an accident previously evaluated will not be increased. The margin of safety as defined in the basis of Technical Specifications will not be reduced. (PROCEDURE 14FT-PFP09)
SARCN	3559	This SARCN change reflects Rev. 1 of Reg. Guide 1.89 which is applicable to the EQ Program and EQ of electrical equipment ITS.	This does not introduce an unreviewed safety question. This does not require a change to the TSs. The probability or consequences of an accident previously evaluated will not be increased. The margin of safety as defined in the basis of TSs will not be reduced.

DOC TYPE	NUMBER	DESCRIPTION	SUMMARY
SARCN	3563	This SARCN changes two sections of the UFSAR which presently preclude liquid wastes from the DAWPS facility so that the purification of used RCP oil can be performed there.	This does not introduce an unreviewed safety question. This change does not involve a test or experiment, and does not require a change to the TSs. The probability of an accident previously evaluated in the UFSAR will not be increased. The consequences of a malfunction of equipment important to safety is not increased. Operating the lube oil purification equipment would not increase the total curie inventory above what has been analyzed for. Additionally, the system does not interconnect with any permanently installed system, nor will it be operated within the vicinity of any safety related equipment. The margin of safety as defined in the basis of TSs will not be reduced.
SARCN	3566	This SARCN changes the displayed accuracy from ±2% to approximately ±3% on the Engineered Safety Feature System Monitor.	This does not introduce an unreviewed safety question. This change does not involve a test, and does not require a change to the TSs. This change has no impact on the failure rate of the AFW system. This flow loop is not used in support of operability testing of the pumps. The margin of safety as defined in the basis of TSs will not be reduced.
SARCN	3568	This SARCN changes the minimum required flow rate for the shutdown cooling heat exchangers from 11,000 to 12,600 GPM.	This does not introduce an unreviewed safety question. This does not require a change to the Technical Specifications. The probability or consequences of an accident previously evaluated will not be increased. The margin of safety as defined in the basis of Technical Specifications will not be reduced.
SARCN	3571	This SARCN change is a paper change only modification to update 13-JM-711, Flexible Metal Hose, via EDC 95-01232.	This does not introduce an unreviewed safety question. This does not require a change to the TSs. The probability or consequences of an accident previously evaluated will not be increased. The margin of safety as defined in the basis of TSs will not be reduced. (DMWO 721830)

DOC TYPE	DOC NUMBER	DESCRIPTION	SUMMARY
SARCN	3575	This SARCN corrects terminology used to describe the process of sampling oxygen concentration in the Gaseous Radwaste System (GRS) which refers to the sampling equipment and states that they are "Redundant." The PVNGS design does not use a redundant sampling system, since the original and existing design use a "Dual" monitoring system to sample GRS header and GRS surge tank. This is a paper change only.	This does not introduce an unreviewed safety question. This SARCN does not require a test or a change to the TSs. The plant will not experience a physical change. The probability of a malfunction of equipment important to safety will not be increased. The margin of safety as defined in the basis of TSs will not be reduced.
SARCN	3581	This SARCN updates the quality function of valves in the EW, NC, and SP systems. This SARCN changes T3.9-25 to make reference to the tables in the individual sections that show active valves.	This does not introduce an unreviewed safety question. This does not require a test or a change to the TSs. These changes correct the description of the facility in the UFSAR, but do not change the plant facility in any way. The probability of a malfunction of equipment important to safety will not be increased. The margin of safety as defined in the basis of TSs will not be reduced.
SARCN	3585	This SARCN involves the Spray Pond Header/Bypass Valve Operators.	This change does not introduce an unreviewed safety question. This does not require a change to the Technical Specifications. The margin of safety as defined in the basis of Technical Specifications will not be reduced. (LDCP 13LE-SP-067)
SARCN	3593	This SARCN replaces the retention basin pumps and motors and space heaters at the retention basins with higher capacity pumps and the required motors and space heaters.	This does not introduce an unreviewed safety question. This change does not involve a test or experiment, and does not require a change to the TSs. The probability of an accident previously evaluated in the UFSAR will not be increased. The retention basin sump pumps have no safety design basis or safety function as given in the UFSAR. The margin of safety as defined in the basis of TSs will not be reduced.

DOC TYPE	DOC NUMBER	DESCRIPTION	SUMMARY
SARCN	3595	This SARCN changes the operations rotation from a six shift rotation to a five shift, self-relieving schedule.	This does not introduce an unreviewed safety question. This does not require a test or a change to the TSs. However, it does require a change to procedure 40AC-9OP02. Since the control room manning is not reduced by changing the number of operating shifts, there is no increase in the consequences of an accident previously evaluated. The margin of safety as defined in the basis of TSs will not be reduced.
SARCN	3597	EDITORIAL. During an MSIS, signal should be shown (in UFSAR) as closed not open, and other changes.	This change does not introduce an unreviewed safety question. This does not require a change to the Technical Specifications. The margin of safety as defined in the basis of Technical Specifications will not be reduced. (DMWO 725392)
SARCN	3600	This SARCN involves the Chemical Waste Neutralizer Tank quality class.	This change does not introduce an unreviewed safety question. This does not require a change to the Technical Specifications. The margin of safety as defined in the basis of Technical Specifications will not be reduced.
SARCN	3603	This SARCN clarifies the UFSAR sections related to independent inspections for consistency with changes approved by SARCN 3508.	This does not introduce an unreviewed safety question. This does not require a test or a change to the TSs. This change makes no physical changes to the plant and has no affect on the requirements for inspection, testing, design, operation, or maintenance of plant equipment. The margin of safety as defined in the basis of TSs will not be reduced.

DOC TYPE	DOC NUMBER	DESCRIPTION	SUMMARY
SMOD	1 SM-NH-001	This SMOD adds a manual transfer switch to provide alternate power to Unit 1 microwave equipment (located at the 160' level corridor) room to maintain power in the event of SO1/SO2 failure.	This does not introduce an unreviewed safety question. This does not require a change to the TSs. The consequences of an accident previously evaluated will not be increased. This modification will enhance containment reliability. The equipment providing power to the transfer switch is non-class related and is not safety related. The margin of safety as defined in the basis of TSs will not be reduced.
SMOD	1 SM-SQ-028	This SMOD will remove the Hygrometer from the containment atmosphere radiation monitor.	This does not introduce an unreviewed safety question. There is no applicable Technical Specification for the Hygrometer. The accidents referenced in the UFSAR, Chapter 15 are independent of the operation of the radiation monitors. The design of the site mod does not affect any of the circuits required for the monitor to perform its function of detecting radiation and providing an output alarm at a high level. The basis of accident evaluations assumes that the Radiation Monitoring System is inoperable. The margin of safety as defined in the basis of TSs will not be reduced.
SMOD	1 SM-ZC-007	This SMOD removes concrete curbing under the MST. The curbing was initially needed to help contain washwater. However, since the method to wash the reactor head studs has changed, the curbing is no longer required.	This does not introduce an unreviewed safety question. This does not require a change to the TSs. The analysis is enveloped by Unit 2 and 3 designs. The margin of safety as defined in the basis of TSs will not be reduced.
SMOD	1,2 SM-ZF-002	This SMOD installs a safety cage on the ladder that provides access to the fuel transfer tube bellows inspection station. This will provide additional protection to personnel.	This does not introduce an unreviewed safety question. This does not require a change to the TSs. This installation will have no affect on equipment ITS. The consequences of an accident previously evaluated will not be increased. The margin of safety as defined in the basis of TSs will not be reduced.

DOC TYPE	DOC NUMBER	DESCRIPTION	SUMMARY
SMOD	1,2,3 SM-CD-005	This SMOD replaces the old Masoneilan valve with a Vannessa metal seat zero leakage valve on the demineralizer bypass piping. The old valve was found to be inadequate to sustain operation . The Masoneilan valve was found to have repetitiously bent shafts and damaged Buna-N liners which allowed the valve to leak by and inhibit CD system chemistry clean-up.	This does not introduce an unreviewed safety question. This does not require a change to the Technical Specifications. The new valve will be operated in the identical manner of the Masoneilan valve, therefore, there is no change to the evaluated safety analysis. The back-up actuation system still protects against loss of electrical signal and loss of air, and the valve responds to all signals as the original valve did, as a result, the consequences will not be altered. The margin of safety as defined in the basis of TSs will not be reduced.
SMOD	1,2,3 SM-FP-015	This SMOD adds an automatic fire protection sprinkler system in the office and shop occupancy on the east end of the Turbine-Generator Building and I&C repair shop on south side.	This does not introduce an unreviewed safety question. This does not require a change to the TSs. The consequences of an accident previously evaluated will not be increased. This addition will not increase the consequences of a malfunction of equipment ITS because it does not adversely affect the ability of quality related structures to perform safety related or ITS functions. The margin of safety as defined in the basis of TSs will not be reduced.
SMOD	1,2,3 SM-HR-003	This SMOD adds drain lines to the exhaust duct leading to the plant vent, installs a relative humidity (RH) meter (with recorder) in the duct downstream of the BAC discharge, and reroutes the BAC discharge downstream of Train "B" HA system exhaust.	This does not introduce an unreviewed safety question. No changes to TSs are required. The drain line has been rerouted away from all safety related equipment, and therefore, will not increase the probability of a malfunction of equipment ITS. The RH meter installation is also NQR. The margin of safety as defined in the basis of TSs will not be reduced.
SMOD	1,2,3 SM-LR-019	This SMOD reroutes the pump seal water piping of the Concentrate Monitor Pumps and installs flanges in drain piping to aid in the ease of removal.	This does not introduce an unreviewed safety question. No changes to TSs are required. This change will be done in partial increments - one pump and then the other. It will not increase the probability of an accident previously evaluated. The Concentrate Monitor Pumps, seal water piping and drain piping do not interface with any equipment ITS. The margin of safety as defined in the basis of TSs will not be reduced.

DOC TYPE	NUMBER	DESCRIPTION	SUMMARY
SMOD	1,2,3 SM-NH-004	This SMOD changes the GE type ground fault relays (GFRs) and associated components with available Westinghouse components. The relay assembly will be installed in the MCC compartments that supply non-class 1E 480V ac power to welding receptacle circuits whose primary use is for maintenance and construction convenience.	This does not introduce an unreviewed safety question. This does not require a change to the TSs. The consequences of an accident previously evaluated will not be increased. The new GFRs will not interrupt or break a circuit. This will not change the operating parameters of the MCC compartments and associated electrical circuits. The margin of safety as defined in the basis of TSs will not be reduced.
SMOD	1,2,3 SM-RC-007	This SMOD removes unused RCP thrust bearing jacking equipment.	This does not introduce an unreviewed safety question. This does not require a change to the TSs. This change only affects the maintenance equipment which is not being used, is not structural, and does not affect equipment operation. The consequences of an accident previously evaluated will not be increased. The margin of safety as defined in the basis of TSs will not be reduced.
SMOD	1,2,3 SM-SG-016	This SMOD replaces the Foxboro auto-manual output module of the ADV hand indicating controller located at the remote shutdown panel (RSP). This reason for this change is that it is more desirable to have a module which will be forced into the automatic mode on loss and restoration of power.	This does not introduce an unreviewed safety question. No changes to TSs are required. The consequences of accidents evaluated, specifically any requiring safe shutdown from outside the control room, are reduced or eliminated by the use of the RSP. These new modules are manufactured by the same company and used in the same way. The margin of safety as defined in the basis of TSs will not be reduced.
SMOD	1,2,3 SM-SP-011	This SMOD removes the local panel indicator lights and limit switches from the spray pond filter backwash valves. These switches only actuate the local panel lights and are high maintenance items due to water splash corrosion.	This does not introduce an unreviewed safety question. No changes to TSs are required. This action will not increase the probability of any of the postulated accidents previously evaluated. The margin of safety as defined in the basis of TSs will not be reduced.

DOC TYPE	NUMBER	DESCRIPTION	SUMMARY
SMOD	1,2,3 SM-ZF-005	This SMOD adds safety lifelines in the fuel building at the spent fuel pool and bay crank/spent fuel pool crane elevations. This will bring the areas into conformance with OSHA section 1926.104(b).	This does not introduce an unreviewed safety question. This does not require a change to the TSs. The consequences of an accident previously evaluated will not be increased. The lifeline is not a safety related item and performs no safety related function. The margin of safety as defined in the basis of TSs will not be reduced.
SMOD	1,3 SM-OW-002	This SMOD provided a means to bypass the oil/water separator during periods when the separator is out of service for maintenance.	This does not introduce an unreviewed safety question. No changes to TSs are required. The Oil Waste System is not discussed in the FSAR and has no impact on ITS or safety related equipment. The margin of safety as defined in the basis of TSs will not be reduced.
SMOD	1,3 SM-QA-003	This SMOD adds normal lighting inside a room providing ladder access to the DG building roof. The ladder is routinely used by security personnel and thus the lack of lighting was a concern.	This does not introduce an unreviewed safety question. No changes to TSs are required. The addition of normal lighting in this room has no affect on any equipment important to safety nor is it safety related. The margin of safety as defined in the basis of TSs will not be reduced.
SMOD	1-SM-ZY-007	This SMOD provides a temporary slab for the evaporator system. This will be a ground level slab used for equipment.	This does not introduce an unreviewed safety question. No changes to TSs are required. This will not increase the probability of an accident previously evaluated because it will not affect the performance of any safety related structure, system, or component. The margin of safety as defined in the basis of TSs will not be reduced.

DOC TYPE	DOC NUMBER	DESCRIPTION	SUMMARY
SMOD	2 SM-CI-001	This SMOD changes the route of the turbine acid storage tank drains.	This does not introduce an unreviewed safety question. This does not require a change to TSs. This change has no affect on operation, nor does it affect previously evaluated accidents. The margin of safety as defined in the basis of TSs will not be reduced.
SMOD	2 SM-CM-003	This SMOD changes the wiring and nomenclature of switches J-CMN-LSL-15 & LSLL-20. This change will eliminate low level nuisance alarm from the Control Room.	This does not introduce an unreviewed safety question. This does not require a change to TSs. The changes to switch do not affect, in anyway, the design basis for the equipment and floor drainage systems. This change does not affect previously evaluated accidents. The margin of safety as defined in the basis of TSs will not be reduced.
SMOD	2 SM-ED-010	This SMOD reduces the travel stroke on ED & SC system control valves to reduce the potential for condenser tube failures.	This does not introduce an unreviewed safety question. No changes to TSs are required. The control valves are not SR or ITS, thus they have no impact on previous accident analysis. The margin of safety as defined in the basis of TSs will not be reduced.
SMOD	2 SM-HA-001	This SMOD relocates the 1" S ion exchanger vent header discharge point from the branch to the main HA exhaust duct. This change will decrease the probability of releasing radioactive gas back into the auxiliary building from the HA exhaust duct system.	This does not introduce an unreviewed safety question. No changes to TSs are required. The vent header is not ITS or safety related. The margin of safety as defined in the basis of TSs will not be reduced.

DOC TYPE	DOC NUMBER	DESCRIPTION	SUMMARY
SMOD	2 SM-HF-003	This SMOD adds support steel to the fuel building roof normal HVAC exhaust plenum to provide support for a 12' capillary and bulb temperature transducer assembly.	This does not introduce an unreviewed safety question. No changes to TSs are required. This change will enhance the reliability of information available to the control room operator by reducing the possibility of spurious alarms. Also, during accident conditions, the normal exhaust system is isolated and does not itself add to any consequences of an accident. The margin of safety as defined in the basis of TSs will not be reduced.
SMOD	2 SM-MA-010	This SMOD increases the isophase bus cooling generator vent ports to 2". This is done to provide design flow of 100 CFM.	This does not introduce an unreviewed safety question. No changes to TSs are required. The isophase bus cooling does not provide any safety related function. The isophase cooling will function as the designer intended to provide generator terminal ventilation. The structure is not affected. The margin of safety as defined in the basis of TSs will not be reduced.
SMOD	2 SM-QF-013	This SMOD adds telephones to the Unit 2 I&C shop.	This does not introduce an unreviewed safety question. No changes to TSs are required. These office phones do not interface with ITS equipment and are not themselves, ITS. No malfunction will result by the installation and operation of the telephones. The margin of safety as defined in the basis of TSs will not be reduced.
SMOD	2 SM-QM-011	This SMOD provides partial closure required to support the total closure of DCP 13FJ-ZZ-010, namely the addition of heat trace control panels.	This does not introduce an unreviewed safety question. No changes to TSs are required. The probability or consequences of an accident previously evaluated will not be increased. None of the equipment affected by this modification have any bearing on accidents as described in the UFSAR. Furthermore, these changes will not affect the operation of the equipment but will ensure alternate sampling capabilities. The margin of safety as defined in the basis of TSs will not be reduced.

DOC TYPE	DOC NUMBER	DESCRIPTION	SUMMARY
SMOD	2 SM-ZC-010	This SMOD adds permanent storage of rigging hardware and alignment pads in the containment building during plant operation.	This does not introduce an unreviewed safety question. No changes to TSs are required. None of the material being used is made of aluminum which is the concern for the H2 generation during LOCA. Therefore, the consequences of an accident previously evaluated will not be increased. The margin of safety as defined in the basis of TSs will not be reduced.
SMOD	2 SM-ZF-004	This SMOD installs shackles and chain hoists which will be used as safety restraints when fuel pool gates are lifted and removed when spent fuel is in the spent fuel pool.	This does not introduce an unreviewed safety question. No changes to TSs are required. This change will enhance the ability of quality related structures, components, and systems to perform their safety related or ITS functions. The consequences of an accident previously evaluated will not be increased. The margin of safety as defined in the basis of TSs will not be reduced.
SMOD	2 SM-ZJ-007	This SMOD will remove the existing roof overhang at the south entrance of the Corridor Building entry lobby area and install new siding, girts, and parapet to match the existing building exterior.	This does not introduce an unreviewed safety question. Removal of the roof overhang will not change the operation and maintenance of the building. No changes to TSs are required. The probability of an accident previously evaluated will not be increased. Design criteria has been satisfied. The margin of safety as defined in the basis of TSs will not be reduced.
SMOD	3 SM-CP-002	This SMOD lowers the setpoints to PDSL/PDSH22 until PCR 86-13-CP-004 is implemented.	This does not introduce an unreviewed safety question. No changes to TSs are required. HVAC and ductwork is designed to retain structural integrity, but not required to function during and after a safe shutdown. Only the penetrations are considered for a Seismic Category 1 for containment isolation capability. The margin of safety as defined in the basis of TSs will not be reduced.

DOC TYPE	DOC NUMBER	DESCRIPTION	SUMMARY
SMOD	3 SM-CP-004	This SMOD changes the setpoint of the Differential Pressure switch for containment purge exhaust AFU filter. This change will eliminate the nuisance alarms for the power exhaust AFU filter, containment purge system.	This does not introduce an unreviewed safety question. No changes to TSs are required. This change only affects the exhaust filter for the power exhaust containment purge system. In addition, setpoint settings are within the allowable design criteria for PVNGS. This change will not create any new failure mechanism, and therefore, will not increase the probability of a malfunction of equipment important to safety. The margin of safety as defined in the basis of TSs will not be reduced.
SMOD	3 SM-NA-001	This SMOD re-keyed the synchronizing switch operators to prevent multiple synchronizing switches from being on at the same time.	This does not introduce an unreviewed safety question. No changes to TSs are required. The change to the switches only prohibits an operator from having two synchronizing switches on at the same time and prevents the possibility of blowing a fuse in the synchronizing circuitry from cross-connected sources. The margin of safety as defined in the basis of TSs will not be reduced.
SMOD	3 SM-QF-008	This SMOD adds a flat plate type astragal to door J-125. This astragal will not be air-tight, allowing pressure vent paths through the door.	This does not introduce an unreviewed safety question. No changes to TSs are required. The plant security system does not impact any power block systems and the change being made would not change configuration of any safety or non-safety related power block system. The margin of safety as defined in the basis of TSs will not be reduced.
SMOD	3 SM-SG-024	This SMOD adds live loading to packing for MSIVs and FWIVs. This is a change to the facility because the current drawings do not show the live loading.	This does not introduce an unreviewed safety question. No changes to TSs are required. The probability or consequences of an accident previously evaluated will not be increased. The same gland plate and type of packing are used. The valves will be tested prior to declaring them operable. The margin of safety as defined in the basis of TSs will not be reduced.

DOC TYPE	DOC NUMBER	DESCRIPTION	SUMMARY
SMOD	3 SM-SG-029	This SMOD modifies the existing set screw and adds an additional set screw to the handwheel for the steam bypass control valves.	This does not introduce an unreviewed safety question. No changes to TSs are required. The probability or consequences of an accident previously evaluated will not increased. This change does not increase the probability of any equipment malfunction, it simply adds security to the fastening of the handwheel on the SBCVs. The margin of safety as defined in the basis of TSs will not be reduced.
SMOD	3 SM-SR-012	This SMOD deletes the alarm from the solid radwaste control panel to the main control room. Currently, this alarm is not normally manned. Consequently, any spurious alarms from this control panel are relayed to the main control room - and this represents a nuisance alarm which is being eliminated.	This does not introduce an unreviewed safety question. No changes to TSs are required. The probability of an accident previously evaluated will not be increased. This change will not affect any equipment ITS. There is no equipment which is important to safety in the radwaste building. The margin of safety as defined in the basis of TSs will not be reduced.
SMOD	3 SM-ZA-007	This SMOD installs seals in penetrations that have been identified as open and potential noble gas/contamination flow paths. These seals will prevent migration of noble gas to low radiation areas.	This does not introduce an unreviewed safety question. No changes to TSs are required. This installation of seals will not adversely affect the ability of quality related structures, components and/or systems to perform their functions. The margin of safety as defined in the basis of TSs will not be reduced.
SMOD	3 SM-ZC-006	This SMOD adds lifting lugs on embedded plates in the containment building to perform maintenance on valve 3JSIBUV652.	This does not introduce an unreviewed safety question. This does not require a change to the TSs. The probability of an accident previously evaluated will not be increased. The installation of lifting lugs does not affect the operability of any safety related system. The lifting lug design is based on a calculation and is capable of supporting the components to be lifted. The margin of safety as defined in the basis of TSs will not be reduced.

DOC TYPE	DOC NUMBER	DESCRIPTION	SUMMARY
SMOD	ASM-SC-012	This SMOD replaces existing BS&B type "B" rupture discs and associated "FA-7R" safety heads with BS&S type RLS reverse buckling rupture discs and associated type SRB-7RS safety heads. This replacement will allow operation of the blowdown deminerlizer system without regular rupture disc failures.	This does not introduce an unreviewed safety question. This does not require a change to the TSs. The consequences of an accident previously evaluated will not be increased. The affected portions of the Condensate Cleanup System have no safety related function. Therefore, the probability of a malfunction of equipment ITS will not be increased. The margin of safety as defined in the basis of TSs will not be reduced.
SMOD	ASM-HN-001	This SMOD adds a recirculation mode to the Technical Support Center (TSC). This change decreases dose to personnel in the TSC during periods of outside airborne radioactivity (site accident).	This does not introduce an unreviewed safety question. No changes to TSs are required. The probability of an accident previously evaluated will not be increased. The habitability of the TSC is not addressed in the UFSAR. The margin of safety as defined in the basis of TSs will not be reduced.
STUDY	13-MS-A83	This Study reviews the affects of deleting the main drain flow test of the fire water system. This will provide the safety review and evaluation for the NFPA code compliance study review.	This does not introduce an unreviewed safety question. This does not require a change to the TSs. No physical changes have been made, and other testing validates the integrity of the FW System. The probability of a malfunction of equipment important to safety will not be increased. This system is not considered in any UFSAR accident analysis. The margin of safety as defined in the basis of TSs will not be reduced.
STUDY	86CP-9BT03	This study covers the temporary installation of the Mobile Resin Treatment System (MRTS) used at PVNGS. The MRTS is a process that utilizes the BWNT NuResin system for cleaning, separation, and regeneration of condensate polisher resin. The MRTS will be located in the Turbine Building truck bay and the yard area north of the Turbine Building.	This does not introduce an unreviewed safety question. This does not require a test or a change to the TSs. There are no permanent plant changes relating to this evaluation. The probability of an accident previously evaluated will not be increased because this change does not change the function of this portion of the Condensate Polisher System which is to maintain the chemistry conditions within the secondary side of the steam plant. The probability of a malfunction of equipment important to safety will not be increased. This system is not considered in any UFSAR accident analysis. The margin of safety as defined in the basis of TSs will not be reduced.

DOC TYPE	DOC NUMBER	DESCRIPTION	SUMMARY
STUDY	[illegible]C6	This Study reviews the impact of exceeding the burnup limit of 52,000 MWd/MTU for 15 low-tin clad fuel rods.	This does not introduce an unreviewed safety question. This does not require a change to the Technical Specifications. These rods represented less than 0.5% of the total fuel rods in the core. The possibility of a different accident or malfunction has not been created. The margin of safety as defined in the basis of Technical Specifications will not be reduced, even if all 15 rods were assumed to fail.
TMOD	1,2-91-CP-009	This TMOD installs a blind flange and an end cap to isolate penetration 57 at the Auxiliary Building in the Containment Refueling Purge System.	This does not introduce an unreviewed safety question. No changes to TSs are required. This change does not degrade below any design bases or performance of a safety system assumed to function in the accident analysis. This change does not increase the challenges to safety systems assumed to function in the accident analysis such that safety system performance is degraded below the design basis without compensating effects. The margin of safety as defined in the basis of TSs will not be reduced.
TMOD	1-89-EC-081	This TMOD plugs the exhaust port of the essential chiller thermal purge vent valve.	This does not introduce an unreviewed safety question. No changes to TSs are required. Loss of the purge vent function will not impair the function of the essential chiller, so the chiller will continue to fulfill the safety design bases. The margin of safety as defined in the basis of TSs will not be reduced.
TMOD	1-95-DW-005	This TMOD installed a line off of valve DWN-V050 to supply 100 psia water to support chemical cleaning of U1 steam generators. The DWS serves no safety function and has no safety design basis. Containment isolation valves DWE-V061 and V062 are not affected by this T-Mod.	This does not introduce an unreviewed safety question. This change does not involve a test or experiment, and does not require a change to the Technical Specifications. The change does not increase the probability or consequences of an accident nor increase the probability or consequences of a malfunction of equipment important to safety. No new accidents or malfunctions have been created and the margin of safety, identified in the Technical Specifications Basis, has not been reduced.

DOC TYPE	NUMBER	DESCRIPTION	SUMMARY
TMOD	1-95-FT-001	This TMOD adds a plug to the normally open flow diversion pipe connected to the blow-out diaphragm on the Unit 1 Feedwater Pump Turbine "B." This plug will stop air from flowing to the condenser through a leak located on the blowout diaphragm assembly.	This does not introduce an unreviewed safety question. No changes to TSs are required. The FT system is not safety related and is not covered by the TSs. This TMOD does not prevent the blow-out diaphragm from performing its intended function. It will not cause an increase in MFP turbine speed resulting in an increase in feedwater flow. This TMOD does not interface with any systems or components important to safety. The margin of safety as defined in the basis of TSs will not be reduced.
TMOD	1-95-IA-004	This TMOD provides a larger capacity service/breathing air tap-off outside at the spray pond metering pump house to support SG chemical cleaning activities.	This does not introduce an unreviewed safety question. This change does not involve a test or experiment, and does not require a change to the Technical Specifications. The probability of an accident previously evaluated in the UFSAR will not be increased. This TMOD will not change the function of the Service/Breathing Air System. The affected piping is not safety related and there is no safety related equipment near the spray pond metering house. The margin of safety as defined in the basis of TSs will not be reduced.
TMOD	1-95-SH-019	This TMOD will disable the #5 sensor thermocouple and install jumpers at OTB1 terminals 17 & 18 and 18 & 19. This will remove sensor #5 from consideration in determining the heater controller power requirements. This TMOD is being installed because the sensor #5 input ramps up causing alarms. This TMOD affects the RVLMS thermocouple circuit.	This does not introduce an unreviewed safety question. This change does not involve a test or experiment, and does not require a change to the Technical Specifications. The change does not increase the probability or consequences of an accident nor increase the probability or consequences of a malfunction of equipment important to safety. The only system impacted by this is the RVLMS indication portion of QSPDS. Loss of this TMOD would revert back to a condition that was present prior to the installation of the TMOD. No new accidents or malfunctions have been created and the margin of safety, identified in the TS Basis, has not been reduced.
TMOD	1-95-XE-002	This TMOD provides temporary power to the vendor supplied equipment for Unit 1 steam generator chemical cleaning. The additional loading (416A) being added by this TMOD to the 3000A nonclass E-NBN-S01 bus does not affect the capacity of the ENBN-S01 bus nor any of the upstream transformers. The implementation of temporary power is a standard practice during refueling outages.	This does not introduce an unreviewed safety question. No changes to TSs are required. Permanent plant equipment that is normally powered from the associated bus will not be affected, therefore the probability of an accident previously evaluated will not be increased. Breaker coordination will prevent a fault on the temporary load from causing the main breaker on bus E-NBN-S01 from tripping, therefore, the consequence of a malfunction of equipment important to safety will not be increased. The margin of safety as defined in the basis of TSs will not be reduced.

DOC TYPE	DOC NUMBER	DESCRIPTION	SUMMARY
TMOD	[illegible]-ZC-017	This TMOD allows the installation of the containment pedestal crane in Unit 1 at the pressurizer cubicle location. The crane is used to remove equipment from containment at the end of the outage.	This does not introduce an unreviewed safety question. This change does not involve a test or experiment, and does not require a change to the Technical Specifications. The change does not increase the probability or consequences of an accident nor increase the probability or consequences of a malfunction of equipment important to safety. No new accidents or malfunctions have been created and the margin of safety, identified in the Technical Specifications Basis, has not been reduced. Safe load paths are still required for heavy load movement when fuel is in the vessel. The modification has been reconciled with NUREG 0612.
TMOD	2-91-RC-028	This TMOD add thermocouples and strain gages to the four pressurizer PSV's and TCs to spare CEDM #97. This change will allow monitoring thermal profile and stresses on the PSVs and thermal profile on CEDM #97 during power operation.	This does not introduce an unreviewed safety question. No changes to TSs are required. The wiring will be attached so as not to come in contact with other equipment. The wiring will be grounded. The cabling, wiring, and data acquisition units are seismically secured. There is no impact on the containment integrity, or on the ability of any of the safety related equipment to mitigate any of the accidents previously evaluated. The margin of safety as defined in the basis of TSs will not be reduced.
TMOD	2-95-RC-004	This TMOD involves the pressurizer heater B08 being shorted. The heater was electrically disconnected and the proportional heater bank was returned to service with heaters B2 and B14 in an open delta configuration.	This does not introduce an unreviewed safety question. This change does not involve a test or experiment, and does not require a change to the Technical Specifications. The change does not increase the probability or consequences of an accident nor increase the probability or consequences of a malfunction of equipment important to safety. No new accidents or malfunctions have been created and the margin of safety, identified in the Technical Specifications Basis, has not been reduced. Studies show that up to 7 of the 36 heaters in this group could be removed from service without affecting plant operations.
TMOD	2-95-RC-015	This TMOD changes the reactor vessel seal annulus high pressure alarm to a low-pressure alarm to alert operators of a leak in the outer seal (inner seat failed).	This does not introduce an unreviewed safety question. This modification does not involve a test or experiment, and does not require a change to the Technical Specifications. The modification does not increase the probability or consequences of an accident nor increase the probability or consequences of a malfunction of equipment important to safety. No new accidents or malfunctions have been created and the margin of safety, identified in the Technical Specifications Basis, has not been reduced. The seal annulus pressure alarm is not credited for mitigating any event.

DOC TYPE	NUMBER	DESCRIPTION	SUMMARY
TMOD	2-95-RC-016	This TMOD electrically disconnects pressurizer heater A10 and returns the proportional bank back in service with heaters A03 and B15 in an open Delta configuration. This was done due to a ground in heater A10.	This does not introduce an unreviewed safety question. This change does not involve a test or experiment, and does not require a change to the Technical Specifications. The change does not increase the probability or consequences of an accident nor increase the probability or consequences of a malfunction of equipment important to safety. No new accidents or malfunctions have been created and the margin of safety, identified in the Technical Specifications Basis, has not been reduced. The loss of backup heaters is within the bounds of Chapter 15 analysis and is listed in the analyzed failures. No credit is assumed for the pressurizer pressure control system including heaters in accident mitigation.
TMOD	3-93-CP-010	This TMOD installs a blind flange at the Auxiliary Building side of 3JCPBUV0003B to isolate the penetration in the event that unacceptable valve leakage could not be repaired within the time limits of Technical Specification 3.6.1.7. An end cap will be installed in the S-class ductwork upstream of the valve to ensure the Auxiliary Building remains at a negative pressure. The Containment Refueling Purge System can only be utilized when the blind flange is not installed. Consequently, there is no impact on procedures described in UFSAR 9.4.	This does not introduce an unreviewed safety question. The Containment Refueling Purge System is used for high flow rate purge during refueling and is closed during normal power generation in modes 1-4. Sealing of Containment penetration 57 with a testable blind flange will mitigate the consequences of an accident. Calculations show that the flange is capable of withstanding accident pressure and that the weight of the flange will not affect the operability of the penetration. Installation of a testable blind flange serves the same purpose in Modes 1-4 as a locked and sealed closed set of Containment Isolation Valves. The margin of safety as defined in the basis of TSs will not be reduced.
TMOD	3-94-HF-016	This TMOD will disable the "A" train FEBVAS signal from BOP ESFAS to the fuel building normal AHUs which are powered from a non-class power source. This is needed to ensure that normal ventilation is available during the PBA-S03 bus outage ensuring a habitability environment exists for plant equipment and personnel.	This does not introduce an unreviewed safety question. The possibility of an accident previously evaluated will not be increased. Since this work activity only impacts the operation of the fuel building normal AHUs, this will not increase the probability of a fuel handling accident. Since the normal fuel building AHUs will be removed from operation and the fuel building essential filtration unit will be operating prior to handling or irradiated fuel, the consequences of a malfunction of equipment important to safety will not be increased. The margin of safety as defined in the basis of TSs will not be reduced.
TMOD	3-94-XE-007	This TMOD provides temporary power for steam generator chemical cleaning. The purpose of this TMOD is to supply temporary power to the vendor-supplied equipment for steam generator chemical cleaning. The vendor specified loading requirements are 4160V, 3000KVA. The power will be supplied from E-NGN-S01L, which is a non-class spare 4160V cubicle. Modifications will be required to the protective relaying for personnel and equipment safety.	This does not introduce an unreviewed safety question. The addition of the 416A load, as installed per this TMOD, will not affect the design or function of the bus or associated systems during unit shutdowns or during normal plant operations. This TMOD does not adversely affect the non-class 1E electrical system as discussed in the UFSAR. The added load is within the capabilities of the E-NBN-S01 bus. The permanent plant equipment that is normally powered from the associated bus will not be affected, therefore, the probability of an accident previously evaluated will not be increased. No changes to TSs are required.

DOC TYPE	DOC NUMBER	DESCRIPTION	SUMMARY
TMOD	3-95-CI-017	This TMOD connects a temporary CPVC line from the Unit 3 spray pond CI pump discharge line directly into the Unit 3 SP "A" pond. This will allow adding hypochlorite to the pond using the metering pump while the normal addition line is out of service (the line is plugged).	This does not introduce an unreviewed safety question. This change does not involve a test, and does not require a change to the TSs. There is no increase in the radiological consequences of equipment important to safety. The temporary piping is being designed as NQR using the required design parameters developed for the hypochlorite/spray pond systems. The temporary hypochlorite piping system does not have a direct tie with any other important to safety system. The margin of safety as defined in the basis of TSs will not be reduced.
TMOD	3-95-FT-001	This TMOD adds a plug to the normally open flow diversion pipe connected to the flow-out diaphragm on the Unit 3 Feedwater Pump Turbine "A". This plug will stop air from flowing to the condenser through a leak located on the blow-out diaphragm assembly. This plug will stop air flow and condensate oxygen levels will return to normal.	This does not introduce an unreviewed safety question. The main feedwater system will continue to operate in its normal configuration and will continue to function as described in the UFSAR. No changes to TSs are required. This TMOD does not interface with any systems, structures, or components important to safety. The margin of safety as defined in the basis of TSs will not be reduced.
TMOD	3-95-FT-014	This TMOD adds a plate to the normally open flow diversion pipe connected to the blow-out diaphragm on the Unit 3 Feedwater Pump Turbine, B. This plate will stop air from flowing to the condenser through a leak located on the blow-out diaphragm assembly.	This does not introduce an unreviewed safety question. This change does not involve a test or experiment, and does not require a change to the TSs. The probability of an accident previously evaluated in the UFSAR will not be increased. This TMOD does not prevent the MFP turbine or blow-out diaphragm from performing its intended function. It will not cause an increase in MFP turbine speed resulting in an increase in feedwater flow. It will not cause a MFP turbine trip resulting in a loss of feedwater. This TMOD does not interface with any, systems, structures or components important to safety. The margin of safety as defined in the basis of TSs will not be reduced.
TMOD	3-95-QB-016	This TMOD will allow power to the essential lighting panel 3-E-QBN-D84 from normal lighting panel while the phasing capacitors in regulator 3-E-QBB-V02 are being replaced. 3-E-QBN-D84 must be downpowered to replace the phasing capacitors. A stepdown transformer will be utilized to lower the voltage from 480/277 volts to 120 volts.	This does not introduce an unreviewed safety question. This change does not involve a test, and does not require a change to the TSs. Lighting is not discussed in Chapter 15, therefore, this TMOD does not affect the probability of an accident previously evaluated. If failure of the emergency lighting fixtures occurs, hand-held lanterns are readily available. The margin of safety as defined in the basis of TSs will not be reduced.

DOC TYPE	DOC NUMBER	DESCRIPTION	SUMMARY
TMOD	3-95-SG-002	This TMOD installs/leaves in place a drain rig installed downstream of valve 3PSGEV443 which is a normally closed drain valve. This will provide additional isolation due to seat leakage of the drain valve until the next Unit 3 refueling outage, when the valve can be replaced.	This does not introduce an unreviewed safety question. No changes to TSs are required. The probability of an accident previously evaluated will not be increased. Containment isolation is not affected as positive shut-off at the drain point is maintained. The addition of the drain rig will not affect the pipe seismic response. The margin of safety as defined in the basis of TSs will not be reduced.
WO	684526	This WO removes a Thermo-Lag fire barrier on raceways located in the 120' Aux building for destructive examination. The removed barriers were compensated for with manual operator action.	This does not introduce an unreviewed safety question. This change does not involve a test or experiment, and does not require a change to the Technical Specifications. The change does not increase the probability or consequences of an accident nor increase the probability or consequences of a malfunction of equipment important to safety. No new accidents or malfunctions have been created and the margin of safety, identified in the Technical Specifications Basis, has not been reduced. The proposed change of using manual operator actions in lieu of passive fire rated enclosures to safely achieve and maintain cold shutdown does not adversely impact equipment important to safety.
WO	695954	This WO lowers the auto-open switch setpoint for the SIT isolation valves from 490 to 410 psia. This allows for automatic opening of SIT isolation valves on exit from the SDS cooling with backup manual actuation, if necessary.	This does not introduce an unreviewed safety question. No changes to TSs are required. This change will not adversely affect equipment important to safety. The system will continue to operate after this change. This change lowers the setpoint which is conservative in relation to the TSs (515 psia). There is no new accident or failure being introduced that has not be been previously evaluated. The margin of safety as defined in the basis of TSs will not be reduced.
WO	698177	This WO involves the ASME Code Case N-416-1 which allows normal system operation to be used instead of hydrostatic testing. This was not done for the replacement of SI-626 prior to setting the vessel head.	This does not introduce an unreviewed safety question. This change does not involve a test or experiment, and does not require a change to the Technical Specifications. The change does not increase the probability or consequences of an accident nor increase the probability or consequences of a malfunction of equipment important to safety. No new accidents or malfunctions have been created and the margin of safety, identified in the Technical Specifications Basis, has not been reduced. Testing was performed in Mode 3 with HPSI in recirculation to the RWST. The welds had been radiographed.

DOC TYPE	DOC NUMBER	DESCRIPTION	SUMMARY
WO	[illegible]969	This WO raises the transformer tap settings on all non-class 1E load centers to 2.5% boost. CRDR 9-3-0627 indicates a potential concern that voltages at the terminals of various non-class 1E loads on the 480 volt load centers and motor control centers are less than minimum during the plant full power and LOCA conditions. The degraded voltage at the terminals of the equipment could be caused by varying load conditions and long cable runs.	This does not introduce an unreviewed safety question. This does not require a test or a change to the TSs. Transformer tap changes on non class 1E load centers improve the probability that non-safety related loads will have adequate voltages given under a LOCA accident or full power condition. The margin of safety as defined in the basis of TSs will not be reduced.
WO	712365	This WO installs temperature probes (thermocouples) as temperature test points into the auxiliary feedwater system to monitor steam supply line temperature to ensure that the AF steam supply lines below the 100' elevation do not exceed 212°F and become high energy lines.	This does not introduce an unreviewed safety question. This change does not involve a test or experiment, and does not require a change to the TSs. The temperature change does not increase the probability of a malfunction of equipment ITS. Administrative measures will ensure that the maximum pipe temperature below the 100' elevation in the MSSS does not exceed 212°F. The probability of an accident previously evaluated in the UFSAR will not be increased. The margin of safety as defined in the basis of TSs will not be reduced.
WO	715327	This WO documents the installation of feed ring replacement, the extension of sample lines, and the removal/inspection of dryer assemblies in the SG.	This does not introduce an unreviewed safety question. This does not require a change to the TSs. There are no changes in how these systems operate or the plant operates to mitigate the effects of any accident. No event assumptions are affected and there are no affects on any fission product barriers. The margin of safety as defined in the basis of TSs will not be reduced.
WO	715366	This WO provides the results of Eddy Current Testing (ECT) of the Steam Generator tubes. The ECT identifies tubes that are degraded, defective, or tubes with imperfections as defined in Technical Specification 3/4.4.4. The total number of tubes plugged as a result of the repairs specified in this WO and in previous outages is 170 in SG 31 and 193 in SG 32. This is less than the 400 tubes per steam generator assumed in the safety analysis for the next operating cycle per U3C6 groundrules. (SG 32, coldleg.)	This does not introduce an unreviewed safety question. The probability of an SGTR is not increased. Tube plugs and stakes will be installed in defective or degraded tubes identified during Eddy Current and supplementary inspections of the tubes. The plugs to be installed, whether welded or mechanical have been designed and analyzed to the same design conditions as the steam generators. The installation of the plugs will restore the integrity of the RCS pressure boundary. Thus, the required safety margins have and will continue to be maintained, and therefore, the potential for a tube rupture due to corrosion of the tubes is not increased. The consequences of all accidents which require residual heat removal via the SGs are not increased. The SG is the only equipment ITS affected by the activities. The activities associated with this WO do not require a change to TSs.

DOC TYPE	NUMBER	DESCRIPTION	SUMMARY
WO	715367	This WO provides the results of Eddy Current Testing (ECT) of the Steam Generator tubes. The ECT identifies tubes that are degraded, defective, or tubes with imperfections as defined in Technical Specification 3/4.4.4. The total number of tubes plugged as a result of the repairs specified in this WO and in previous outages is 170 in SG 31 and 193 in SG 32. This is less than the 400 tubes per steam generator assumed in the safety analysis for the next operating cycle per U3C6 groundrules. (SG 32, hotleg.)	This does not introduce an unreviewed safety question. The probability of an SGTR is not increased. Tube plugs and stakes will be installed in defective or degraded tubes identified during Eddy Current and supplementary inspections of the tubes. The plugs to be installed, whether welded or mechanical have been designed and analyzed to the same design conditions as the steam generators. The installation of the plugs will restore the integrity of the RCS pressure boundary. Thus, the required safety margins have and will continue to be maintained, and therefore, the potential for a tube rupture due to corrosion of the tubes is not increased. The consequences of all accidents which require residual heat removal via the SGs are not increased. The SG is the only equipment ITS affected by the activities. The activities associated with this WO do not require a change to TSs.
WO	715368	This WO provides the results of Eddy Current Testing of the Steam Generator tubes. The ECT identifies tubes that are degraded, defective, or tubes with imperfections as defined in Technical Specification 3/4.4.4. The total number of tubes plugged as a result of the repairs specified in this WO and in previous outages is 170 in SG 31 and 193 in SG 32. This is less than the 400 tubes per steam generator assumed in the safety analysis for the next operating cycle per U3C6 groundrules. (SG 31, hotleg.)	This does not introduce an unreviewed safety question. The probability of an SGTR is not increased. Tube plugs and stakes will be installed in defective or degraded tubes identified during Eddy Current and supplementary inspections of the tubes. The plugs to be installed, whether welded or mechanical have been designed and analyzed to the same design conditions as the steam generators. The installation of the plugs will restore the integrity of the RCS pressure boundary. Thus, the required safety margins have and will continue to be maintained, and therefore, the potential for a tube rupture due to corrosion of the tubes is not increased. The consequences of all accidents which require residual heat removal via the SGs are not increased. The SG is the only equipment ITS affected by the activities. The activities associated with this WO do not require a change to TSs.
WO	715369	This WO provides the results of Eddy Current Testing of the Steam Generator tubes. The ECT identifies tubes that are degraded, defective, or tubes with imperfections as defined in Technical Specification 3/4.4.4. The total number of tubes plugged as a result of the repairs specified in this WO and in previous outages is 170 in SG 31 and 193 in SG 32. This is less than the 400 tubes per steam generator assumed in the safety analysis for the next operating cycle per U3C6 groundrules. (SG 31, coldleg.)	This does not introduce an unreviewed safety question. The probability of an SGTR is not increased. Tube plugs and stakes will be installed in defective or degraded tubes identified during Eddy Current and supplementary inspections of the tubes. The plugs to be installed, whether welded or mechanical have been designed and analyzed to the same design conditions as the steam generators. The installation of the plugs will restore the integrity of the RCS pressure boundary. Thus, the required safety margins have and will continue to be maintained, and therefore, the potential for a tube rupture due to corrosion of the tubes is not increased. The consequences of all accidents which require residual heat removal via the SGs are not increased. The SG is the only equipment ITS affected by the activities. The activities associated with this WO do not require a change to TSs.
WO	721473	This WO allows the U3 SG1 economizer valve to be placed back into service with a degraded internal component (seat ring threads have erosion damage) until it can be properly repaired or reworked during the next refueling outage.	This does not introduce an unreviewed safety question. This does not require a test or a change to the TSs. This condition will not create a structural concern because the internal component stack-up clamping forces will ensure no shifting will occur during operation. This condition will, however, permit some leak-by when the valve is closed and a very minor rate of leak-by when the valve is open. This increased flow is inconsequential to any previously evaluated accident scenarios. The margin of safety as defined in the basis of TSs will not be reduced.

DOC TYPE	DOC NUMBER	DESCRIPTION	SUMMARY
WO	728762	This WO involves Engineering to evaluate the condition of undersized welds at the blowdown valve station in the turbine building (identified in CRDR 150160) and to determine if they can be use-as-is or if weld build-up is required.	This does not introduce an unreviewed safety question. This does not require a test or a change to the TSs. The proposed change does not affect system performance. There are no changes in instrument accuracies or response characteristics. This repair will not introduce a change to any system interface. Therefore, the probability of an accident previously evaluated will not be increased. This change does not add or delete equipment from the plant or change the design function of the blowdown system. The margin of safety as defined in the basis of TSs will not be reduced.
WO	730988	This WO grinds out indications in instrument nozzle weld in the SG 31.	This does not introduce an unreviewed safety question. This does not require a change to the TSs. This weld repair does not alter the response of the NSSS or other systems during any mode of operation. This SG nozzle repair is analyzed in accordance with the rules of the ASME code. The margin of safety as defined in the basis of TSs will not be reduced.
WO	734460	This WO will disable the heater for sensors #3&5. The sensors of "A" train of the RVLMS are inoperable, and it is recommended continued operation for this HJTC assembly since plenum/head region sensors are still operable. The heater will be simulated by the installation of a load dropping resistor that will allow the continued use of the companion circuit. This change will disable the #3&5 sensor thermocouple inputs and jumpers will be installed to maintain adequate temperature inputs for heater controller power computations.	This does not introduce an unreviewed safety question. This does not require a test or a change to the TSs. This repair is required to return the heater and control portion of the RVLMS train "A" to service. This repair is electrical and will not affect the pressure boundary integrity of the HJTC assembly. This repair will supply the proper voltage and current from the heater controllers to each of the HJTC assemblies. Failure of the system would affect the ability to monitor post accident conditions but would not cause an accident of a different type then previously evaluated. The margin of safety as defined in the basis of TSs will not be reduced.
WO	876988	This WO extends the existing automatic wet pipe sprinkler system to the turbine skirt in Units 1,2, & 3. This modification will enhance fire protection currently provided in the Turbine Building.	This does not introduce an unreviewed safety question. No changes to TSs are required. This change provides additional fire protection and will not increase the probability of the occurrence of fire or other accidents affecting safety related systems. Any inadvertent actuation of this system would only wet the exterior of the lube oil lines and related equipment under the turbine skirt and does not introduce any probability of any malfunction of equipment important to safety. The margin of safety as defined in the basis of TSs will not reduced.

DOC TYPE	DOC NUMBER	DESCRIPTION	SUMMARY
WRF	WDP-CM-202	This WRF/SARCN change reroutes the spent regen sump discharge from the retention basins/evaporation ponds to the WRF clarifier feed sump where the water will be blended with the influent and treated to provide makeup to the Circulating Water System. This change will slightly reduce the amount of water which will be pumped to the evaporation ponds and will instead use this water as makeup to the circulating water systems.	This does not introduce an unreviewed safety question. This does not require a test or a change to the TSs. The reduction in flow to the evaporation ponds will increase their useful life. This change does not affect any equipment important to safety. The margin of safety as defined in the basis of TSs will not be reduced.

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(Strategic Plan Date)

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TO FINAL APPROVER

Target Date: 3/27/96 to WLS (To Final Reviewer 3 Days Prior to Due Date) **Actual Date:** 3/27/96 (Date Final Reviewer Received) **Signature Date:** __/__/__ (Date Approved/Letter Date)

ROUTE TO INDIVIDUAL	STA.	SIGNATURE REQUIRED	REVIEW REQUIRED	DATE REVIEWED/APPROVED	COMMENTS
1. Scott Bauer			✓	3/27/96	
2. Angie Krainik			✓	3/27/96	Submitted to AKK 3/21/96
3. Greg Overbeck			✓	3/27/96	
4. Bill Stewart		✓			
5.					
6.					
7.					

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cc: Dolly Rogers