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Nebraska Public Power District

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***** EXEMPT FROM PUBLIC DISCLOSURE AT THIS TIME *****

CNSS944069
December 12, 1994

Mr. James Lieberman
Director, Office of Enforcement
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Reference: **Cooper Nuclear Station**
Reply of Nebraska Public Power District to Demand for Information of November 10, 1994

Dear Mr. Lieberman:

This letter and its attachments provide the response of Nebraska Public Power District (NPPD) to the NRC's Demand for Information (EA 94-177), transmitted by letter from Mr. James L. Milhoan, Deputy Executive Director for Nuclear Reactor Regulation, Regional Operations and Research, dated November 10, 1994. The Demand for Information pertains to a report of an investigation conducted by the NRC's Office of Investigations (OI), Region IV, concerning revisions to the reactor pressure vessel (RPV) disassembly procedures implemented on March 9, 1993 during the refueling outage at Cooper Nuclear Station (CNS).

Based on a review of OI's report, the NRC indicates that the Demand for Information is being issued to obtain information related to apparent violations of 10 C.F.R. § 50.9 and Technical Specification (TS) 3.7.C.1.d. In the Demand for Information, the NRC expresses concerns with the functioning of the Station Operations Review Committee (SORC) and actions of the former CNS **Site Manager.** At this stage, NPPD's focus is on the future. Nevertheless, we take the charges reflected in the Demand for Information very seriously, and have conducted a careful and thorough review of this matter. A summary of our response to the Demand for Information is provided below. Our detailed response to the Demand for Information is provided in the Attachment (as supplemented by a number of Exhibits).[1]

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[1] Since Mr. Milhoan's letter indicates that the NRC will delay placing the Demand for Information and NPPD's response in the Public Document Room, NPPD requests that this letter and the enclosed response be treated at this time as exempt from disclosure under 10 C.F.R. § 2.790. In accordance with the NRC's request, NPPD has prepared this response in a form that

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[Summary of NPPD's Response]

[Position On Careless Disregard Issues]

NPPD does not believe that the facts support a finding of "careless disregard" of requirements on the part of CNS managers and supervisors. NPPD therefore does not believe that enforcement action is appropriate in this case, either against NPPD itself or the individuals involved. The NRC's Enforcement Policy, 10 C.F.R. Part 2, Appendix C, Section VIII, states that enforcement actions involving individuals are "significant personnel actions, which will be closely controlled and judiciously applied." This case does not, in our view, involve misconduct that would warrant the significant step of enforcement action directed against any particular individual. Such action could effectively destroy the nuclear careers of individuals based on subjective interpretation of a single isolated action.

As explained in the response, NPPD does not believe that the former [Site Manager] or SORC members at the time acted with careless disregard for requirements. On the contrary, our review indicates that they considered the applicable requirements and safety considerations and reached a judgment, in good faith, that the changes in procedures were consistent with those requirements and safety considerations. Specifically, in adopting changes to the vessel disassembly procedures on March 9, 1993, it appears that the former [Site Manager] and SORC members considered the following:

- The relevant requirements of TS 3.7.C.1.d, which requires secondary containment integrity to be maintained during movement of "loads which could potentially damage irradiated fuel . . . ."

- Relevant provisions of NUREG-0612, which provides NRC standards on the control of heavy loads -- including requirements to control movement of the reactor vessel head and upper internals, in accordance with NPPD's approved NUREG-0612 programs and design features.

- The 1988 NRC memorandum by then Project Manager William O. Long, interpreting TS 3.7.C.1.d at the time to provide

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can eventually be placed in the NRC Public Document Room -- i.e., NPPD has highlighted or bracketed for redaction the names and other identifying information that could constitute an unwarranted invasion of personal privacy.

that the secondary containment integrity test need not be conducted until immediately prior to moving irradiated fuel (i.e., after RPV disassembly).

- A record of telecon with General Electric, which provided clarification of the underlying concern of PRC 88-11. NPPD's response to PRC 88-11 was the basis for originally adopting the stringent procedural controls that were deleted by the March 9, 1993 revisions.

On the basis of these considerations, the former [Site Manager] and SORC (unanimously) concluded that the procedure revision to allow lifting of the vessel head prior to verifying secondary containment integrity was consistent with TS 3.7.C.1.d. They reasoned that since lifting of the vessel head was adequately controlled by NPPD's actions in response to the requirements of NUREG-0612 (use of a single-failure-proof reactor building crane and lifting device, safe load paths, etc.), and was not the focus of PRC 88-11, the vessel head did not constitute a load that "could potentially damage irradiated fuel" within the meaning of TS 3.7.C.1.d. In addition, several NPPD managers at the time, including the [Site Manager] and the [SORC Chairman] believed that the procedure change would reduce shutdown risk since it would allow the refueling cavity to be flooded up, as opposed to keeping the plant in a reduced inventory condition with high decay heat.

As detailed in the Attachment, where the record in this case indicates that NPPD officials acted reasonably and in good faith in an attempt to determine whether the procedure revisions were consistent with TS 3.7.C.1.d, the NRC would be justified in concluding that their conduct does not amount to careless disregard. Careless disregard indicates that it did not matter to the alleged violator what his/her obligations were under the law. It does not include a situation, as we have here, where licensee personnel have considered relevant requirements and reasonably believe that their actions are in compliance. Nor does it include, in NRC's words, "[v]iolations caused by simple error, misjudgment, miscalculation, ignorance, or confusion on the part of the individual." 56 Fed. Reg. 40664, 40676-677 (August 15, 1991).

Position On Apparent Violations

TS 3.7.C.1.d

CNS TS 3.7.C requires secondary containment integrity to be maintained during shutdown unless several conditions are met. One of these conditions, TS 3.7.C.1.d, is the following:

> No irradiated fuel is being handled in the secondary containment and no loads which could potentially damage irradiated fuel are being moved in the secondary containment.

In addition, the Bases for TS 3.7.C state that secondary containment is required "during refueling, and during movement of loads which could potentially damage irradiated fuel."

NPPD does not believe that it violated TS 3.7.C.1.d when it instituted the procedure changes on March 9, 1993, permitting RPV disassembly prior to completing the test for verification of secondary containment integrity.[2/] Because of NPPD controls on lifting of heavy loads established pursuant to NRC guidance in NUREG-0612 (including single-failure-proof lifting devices), the RPV head and upper internals were not considered to be loads that could potentially damage irradiated fuel within the meaning of TS 3.7.C.1.d.[3/] NUREG-0612 governs movement of heavy loads -- explicitly including the RPV head and upper internals. NPPD has applied TS 3.7.C.1.d to require secondary containment integrity when movement of irradiated fuel is to begin (i.e., following RPV disassembly). The language of TS 3.7.C.1.d quoted above was not intended by NPPD to preclude RPV disassembly, but rather to address

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2/ NPPD's past practice at CNS has been to verify secondary containment integrity prior to disassembly, if possible. This was attempted during the March 1993 outage, but a successful test of secondary containment integrity could not be accomplished in time. The leak test conducted at approximately 10:40 p.m. on March 8, 1993 registered -0.22 inches water gauge (the acceptance criterion is -0.25 wg).

3/ A subsequent General Electric load-drop analysis of a vessel head, dryer and separator drop concluded that "no damage to the fuel is predicted since the component geometry precludes damage to the fuel." See "Structural Analysis of the Cooper Reactor Pressure Vessel Head, Shroud Head/Steam Separator Assembly, and Steam Dryer Assembly Drop Conditions," General Electric Nuclear Energy, GE-NE-523-65-0593 (May 1993).

smaller loads carried over the spent fuel pool or the RPV after the head was removed.

NPPD's interpretation of TS 3.7.C.1.d is consistent with prior NRC Staff positions. In 1988, the NRC Project Manager for CNS reviewed this matter and stated in a docketed memorandum interpreting the surveillance requirements associated with TS 3.7.C.1.d that CNS need not perform the secondary containment integrity test until "immediately prior to handling of irradiated fuel."[4/] NRC Inspection Report 50-298/88-07, dated May 11, 1988, also documented this conclusion (at p. 9), noting that "[i]t was agreed that the test to demonstrate secondary containment need only be performed prior to fuel movement."

It is true that these conclusions were reached prior to the addition in 1991 of the language prohibiting the movement of "loads which could potentially damage irradiated fuel."[5/] However, as noted above, NPPD did not intend this language to address the RPV disassembly process already adequately addressed by NUREG-controls (approved by NRC), but rather to restrict movement of smaller loads that might fall into the spent fuel pool or RPV after the head is removed. While NPPD recognizes that the language of TS 3.7.C.1.d called for an interpretation whenever specific loads were moved, NPPD does not believe that TS 3.7.C.1.d was violated in this instance.

[10 C.F.R. § 50.9]

With respect to the alleged violation of requirements contained in 10 C.F.R. § 50.9, NPPD concurs that the Procedure Change Notice (PCN) form reviewed by SORC on March 9, 1993 should have been complete and accurate in all material respects, but contained some potentially confusing information concerning TS Amendment 147 and, arguably, TS Amendment 150. However, NPPD firmly believes that any inaccuracies or errors on the PCN form were inadvertent. When viewed in their entirety, the PCN statements indicate that the former [Engineering Manager] in preparing the form for SORC, endeavored to disclose the relevant information to SORC's decision, including NUREG-0612, PRC 88-11, NRC Inspection Report 50-298/88-07, as well as TS Amendments 147 and 150 (for reference purposes). In addition, NPPD's review

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4/ NRC memorandum to CNS Docket File from William O. Long, Project Manager, dated March 28, 1988.

5/ Amendment Number 147 to Facility Operating License Number DPR-46, dated October 10, 1991 (effective October 30, 1991).

indicates that inaccuracies on the form regarding TS Amendments 147 and 150 were essentially harmless and did not adversely affect SORC's deliberations, because SORC focussed on the actual language of TS 3.7.C.1.d.

Accordingly, NPPD respectfully suggests that the NRC would be justified in applying a rule of reason in assessing the inaccuracies in the PCN form and should conclude that the inaccuracies do not constitute a violation of 10 C.F.R. § 50.9.

NPPD Actions In Response To Lessons Learned

The events addressed in the Demand for Information occurred some 21 months ago. Since that time, NPPD has made a number of significant management changes at CNS, including the addition of a new **Site Manager, Plant Manager, Engineering Manager and Operations Manager**. Furthermore, as the NRC is well aware, NPPD has implemented a comprehensive Performance Improvement Plan as well as other significant initiatives designed to bring about sustained improvement in overall performance at CNS.

Under NPPD's Performance Improvement Plan and related initiatives, a number of actions have been and will be taken to enhance the independent oversight ability and processes of SORC. NPPD's actions, which will be detailed more fully in a forthcoming reply to the Regional Administrator's letter of August 25, 1994, are summarized in this response. Among the changes are the following:

- The composition of SORC has changed with the addition of the **new Plant Manager (SORC Chairman), the new Engineering Manager (Vice Chairman) and the new Operations Manager.**
- The **new SORC Chairman** has established new standards and expectations for SORC meetings, with a broadened focus on the nuclear safety aspects of the issues presented. The Safety Review and Audit Board has also been challenged with the responsibility of ensuring that the SORC performance is maintained at a high level, e.g., through monitoring SORC meetings and reviewing meeting minutes.
- A SORC Administrator has been appointed to improve meeting coordination and conduct, as well as the quality and completeness of SORC records.
- The keeping of SORC meeting minutes has been enhanced.

- A Nuclear Safety Training course has been provided to SORC members and alternates.

- On November 3, 1994, the governing procedure for the SORC (Procedure 0.3) was revised to provide more flexibility and more accurately describe the SORC activities.

NPPD believes that these changes and the other actions underway as part of its SORC Effectiveness Improvement Plan will serve to provide a strong and independent SORC for future operation of CNS.

In addition, it should be noted that NPPD has proposed changes to the CNS Technical Specifications which, among other things, would effectively replace the current condition (TS 3.7.C.1.d, regarding movement of loads which could potentially damage irradiated fuel) with the applicable provisions of the Standard Technical Specifications (see NPPD Proposed Change No. 106, dated August 31, 1993). NPPD also plans to review procedures prior to the next refueling outage to establish appropriate practices for the future.

Sincerely yours,

Guy R. Horn
Vice-President, Nuclear

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RESPONSE OF NEBRASKA PUBLIC POWER DISTRICT
TO NRC DEMAND FOR INFORMATION
DATED NOVEMBER 10, 1994

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LIST OF EXHIBITS

EXHIBIT A:	CNS Technical Specifications TS 3.7.C. and 4.7.C
EXHIBIT B:	NPPD Temporary Procedure Change Notice, dated March 8, 1993
EXHIBIT C:	NPPD Procedure Change Notice, dated March 9, 1993
EXHIBIT D:	NPPD Minutes of SORC Meeting 893-026 on March 9, 1993, dated March 11, 1993
EXHIBIT E:	NRC Memorandum from Mr. William O. Long to CNS's Docket File, dated March 28, 1988
EXHIBIT F:	NPPD Responses to NUREG-0612, dated October 9, 1981, May 14, 1982, December 3, 1982, July 25, 1983, and September 16, 1983
EXHIBIT G:	NRC Inspection Report 50-298/88-07, dated May 11, 1988 (excerpts)
EXHIBIT H:	GE Letter from David J. Brager to NPPD's Mr. Guy Horn, entitled "PRC 88-11 Mode 4 Technical Specification System Inoperability," dated October 17, 1988
EXHIBIT I:	NPPD Memorandum from R.W. Foust to P.L. Ballinger, "Response to GE PRC 88-11," dated December 7, 1988
EXHIBIT J:	NPPD Procedure Change Notice, dated September 7, 1990
EXHIBIT K:	NRC - CNS TS Amendment 147, dated October 10, 1991
EXHIBIT L:	NPPD Record of Telecon with GE, dated March 9, 1993
EXHIBIT M:	NPPD Proposed Change No. 68 to CNS Technical Specifications, dated July 18, 1991 (TS Amendment 147)
EXHIBIT N:	NPPD Proposed Change No. 95 to CNS Technical Specifications, dated July 19, 1991 (TS Amendment 150)
EXHIBIT O:	NRC - CNS TS Amendment 150, dated December 31, 1991

RESPONSE OF NEBRASKA PUBLIC POWER DISTRICT TO NRC DEMAND FOR INFORMATION

I. INTRODUCTION

Nebraska Public Power District (NPPD) hereby responds to the NRC's Demand for Information dated November 10, 1994. Section II of the response summarizes the events during that 1993 refueling outage relating to the changes to the reactor pressure vessel (RPV) disassembly procedures which are the subject of the Demand for Information. In addition, Section II summarizes the development of the requirements applicable to movement of loads inside secondary containment at Cooper Nuclear Station (CNS). Section III below provides NPPD's detailed response to the requests contained in Section III of the Demand for Information.

The central issue in this matter is whether the procedure changes were made without regard to TS 3.7.C.1.d. The Synopsis of the Office of Investigations' Report states that "CNS issued new procedures that deleted the secondary containment requirements without regard to the requirements set forth in the tech. specs." In this connection, the Demand for Information at p. 1 states that "[t]he RPV head and upper internals are loads that have the potential to damage irradiated fuel if dropped." As explained below, NPPD respectfully disagrees with the NRC's conclusions. The facts indicate that Station Operations Review Committee (SORC) members specifically considered the requirements of TS 3.7.C.1.d and concluded in good faith that the RPV head and upper internals were not loads of concern under TS 3.7.C.1.d. It is reasonable that SORC interpreted TS 3.7.C.1.d on March 9, 1993 as not having imposed additional, more restrictive requirements on the movement of RPV disassembly loads. SORC review of NUREG-0612 indicated that these loads were considered and concluded that NPPD had already resolved related concerns identified by the NRC in NUREG-0612.

II. FACTUAL BACKGROUND

On March 8 and 9, 1993, during the refueling outage at CNS, NPPD implemented procedure changes permitting CNS personnel to proceed with RPV disassembly, including lifting the RPV head and upper internals,[1] prior to verifying secondary containment integrity. The focus of the NRC Demand for Information is whether the procedure changes permitting the lifting of those loads constituted a violation of CNS Technical Specification ("TS") 3.7.C.1.d, which requires secondary containment integrity to be maintained when moving loads inside containment that could

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1/ For purposes of this response, the term "upper internals" refers to the steam dryer and shroud/head steam separator assembly.

potentially damage irradiated fuel. . . ." The relevant Technical Specification provisions are attached as Exhibit A.

A. Summary of Events During the 1993 Outage

The refueling outage at CNS began on March 6, 1993. On March 8, 1993, the CNS Maintenance crew was preparing to begin reactor pressure vessel disassembly. Section 7.4 of Maintenance Procedure 7.4.4 (Revision 19) required verification of secondary containment integrity as a prerequisite to commencing vessel disassembly. The secondary containment leak test had not been satisfactorily completed as of that time. A secondary containment leak test conducted at approximately 10:40 p.m. on March 8, 1993 registered at -0.22 inches water gauge. The acceptance criterion for a successful test is -0.25 in. water gauge under Technical Specification 4.7.C.

The delay in vessel disassembly prompted NPPD management to review procedural requirements. Until 1991, there had not been a procedural requirement to verify secondary containment integrity prior to vessel disassembly. This requirement had been added to procedures in 1991 in connection with NPPD's response to a notification from General Electric in Potentially Reportable Condition ("PRC") 88-11. Prior to the 1991 procedure changes, it had been NPPD's practice to establish secondary containment integrity, if possible, prior to vessel disassembly, although this was not a specific procedural requirement. As a result, in past outages, vessel disassembly was allowed to proceed even if the secondary containment leak test had not yet been successfully completed.

On March 8, CNS implemented a temporary procedure change to move the requirement for secondary containment verification from the prerequisite section to a later stage in the disassembly procedure (i.e., at the point when the head is ready to be lifted after detensioning).[2/] This change permitted the Maintenance crew to perform the steps of the disassembly procedure (including detensioning) up to the point of removing the RPV head. The temporary procedure change still did not permit the Maintenance crew to lift the head without verification of secondary containment integrity.

On March 9, 1993 the reactor was in shutdown status with reduced inventory, partial Emergency Core Cooling System availability, and high decay heat. NPPD managers, including the SORC Chairman, believed that having the plant in this condition presented an increased degree of shutdown risk due to the high decay heat level, and that the refueling cavity should be flooded

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2/ Temporary Procedure Change Notice dated March 8, 1993 (attached as Exhibit B).

to establish full inventory as soon as possible. The [Site Manager] at that time, who was unaware that the RPV head had been detensioned, also believed that proceeding to flood up the cavity was in the best interest of safety. Flooding the refueling cavity required completion of vessel disassembly. Before the cavity can be flooded, the main steam lines must be plugged, which requires removal of the upper internals. NPPD therefore decided to review the basis for the 1991 procedure revisions and, if appropriate, implement a procedure change that would permit Maintenance to proceed with vessel disassembly prior to successful completion of secondary containment testing.

During the morning and early afternoon of March 9, 1993, [Jim Flaherty, the Engineering Manager] supervised a review of the issue and originated a Procedure Change Notice ("PCN") (Exhibit C hereto). Based on Engineering's review of the basis for the requirement, the PCN proposed to eliminate the requirement in CNS's vessel disassembly procedure (Maintenance Procedures 7.4.4) to verify secondary containment integrity prior to lifting the RPV head. (Similar changes were initiated to Maintenance Procedures 7.4.5 and 7.4.6 which govern removal of the upper internals.) The [Engineering Manager] presented materials to SORC, which has responsibility for final approval of procedure changes, to assist SORC in its review. According to the [Engineering Manager] and various SORC members, the following documentation was available to SORC (an official record of the documents reviewed by SORC does not exist):

- TS 3.7.C.1.d;
- NUREG-0612 (1980), providing NRC guidance on control of heavy loads, including the RPV head, dryer and separator, along with documentation of NPPD's response to NUREG-0612;
- NRC Memorandum from Mr. William O. Long to CNS's Docket File, dated March 28, 1988;
- General Electric PRC 88-11 (1988), which noted concerns with the potential for dropping certain loads onto irradiated fuel;
- a record of a telephone conference on March 9, 1993 between General Electric's onsite representative at CNS and the appropriate persons at General Electric's offices in San Jose concerning the scope of PRC 88-11, indicating that PRC 88-11 applied only to those loads under 750 lbs.,[1/] and that heavier loads are addressed in NUREG-0612.

1/ The RPV head weighs over 80 tons.

The [Engineering Manager's] handwritten justification for the procedure change on page 2 of the PCN referenced some of the above documents as well as other related documentation (see Exhibit C) and [Mr. Flaherty] recalls presenting those documents at the SORC meeting on March 9, 1993. (A description of these materials is contained in Section II.B of this response.)

SORC met twice on March 9, 1993 to consider the procedure changes. The first part of the meeting convened at 1515 hours (see Exhibit D -- the SORC meeting minutes), and by various accounts lasted in excess of one hour. Those present at the meeting recall that there was considerable discussion regarding the justification for the proposed changes. In particular, SORC considered the language of Technical Specification 3.7.C.1.d, which required secondary containment integrity to be maintained when moving loads that "could potentially damage irradiated fuel . . . ." Those present at the meeting recall that SORC's deliberations focused on whether movement of the RPV head would constitute movement of a load that "could potentially damage irradiated fuel" within the meaning of that Technical Specification.

Questions raised by SORC prompted some additional research to be conducted during the course of the meeting. At some point during the meeting, CNS personnel identified the 1988 memorandum from then NRC Project Manager William O. Long to CNS's docket file which addressed whether the CNS Technical Specification surveillance requirements in TS 4.7.C required secondary containment integrity testing prior to vessel disassembly. Mr. Long's memorandum concluded that the secondary containment leak test need not be conducted until immediately prior to handling irradiated fuel (see Exhibit E). Some SORC members recall that this NRC interpretation increased their level of comfort that the proposed change did not violate Technical Specifications.[4/]

Based on the information presented, SORC concluded that secondary containment leak testing did not need to be successfully completed prior to vessel disassembly since lifting the RPV head and upper internals is controlled by the CNS response to NUREG-0612, and thus need not have been included in the resolution

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4/ It should be noted that TS Amendment 147 (discussed below) did not revise the surveillance requirements of TS 4.7.C.1.c. or associated Bases. Although the amendment added language to TS 3.7.C.1.d, it was not NPPD's intent when it applied for that amendment to impose requirements which would be redundant to or in excess of the measures implemented in response to NUREG-0612 or to change the corresponding surveillance requirement. The NRC memorandum by Mr. Long, dated March 28, 1988, predates TS Amendment 147; however, the history of TS Amendment 147 does not suggest that it was meant to supersede the interpretation contained in that earlier memorandum.

of PRC 88-11. SORC considered the procedure changes to be consistent with TS 3.7.C.1.d. SORC reasoned that since lifting the RPV head and upper internals is controlled under NUREG-0612 (through the use of a single-failure-proof crane and lifting devices, and safe load paths), these loads do not present the potential to damage irradiated fuel within the meaning of TS 3.7.C.1.d. SORC considered that restrictions of TS 3.7.C.1.d on the movement of loads with the potential to damage irradiated fuel applied to small loads, such as a local power range monitor detector assembly, that were not already analyzed or controlled under existing requirements.

SORC approved the change to Maintenance Procedure 7.4.4 during the first part of the meeting on March 9, 1993. SORC's approval was unanimous, with no dissenting views or abstentions. SORC reconvened at 1700 hours on March 9. During this second part of the SORC meeting, similar changes to Maintenance Procedures 7.4.5 and 7.4.6 were approved to allow removal of the upper internals prior to completion of the secondary containment leak test.

Some CNS personnel disagreed with the changes. Upon reporting to work on the night shift on March 9, and learning of the procedure change, [**Rick Foust, the Assistant Operations Engineering Supervisor**] expressed disagreement with the procedure change to [**Mr. Flaherty, his supervisor**]. This conversation occurred in the third floor conference room after the SORC meeting had ended. [**Rick Gardner, the Plant Manager and SORC Chairman**] at the time, overheard part of this conversation but was not part of it. [**Mr. Foust**] had been responsible for developing NPPD's earlier response to PRC 88-11, and apparently believed that the revisions approved by SORC were marginal from a standpoint of prudency, because he was unaware of any analysis of the consequences of dropping loads on irradiated fuel. It does not appear, however, that **Mr. Foust** was aware that the NRC had not required a consequences analysis for loads addressed in NUREG-0612 (see discussion of NPPD's response to NUREG-0612 below). In addition, [**Brent Moeller, the Senior Maintenance Technician**] who originated the 1991 PCN regarding Maintenance Procedure 7.4.4, has also indicated that he disagreed with the procedure change.

Following SORC approval of the procedure change, the vessel head was removed at approximately 00:45 hours on March 10, 1993. The dryer and separator were also removed on March 10, 1993. The secondary containment test passed on March 11, 1993.

[B. Standards Applicable to Movement of Heavy Loads at CNS]

NPPD has reviewed the requirements and guidance relevant to the issues raised in the Demand for Information. The following discussion summarizes these provisions.

1. NUREG-0612

In July of 1980, the NRC issued NUREG-0612, "Control of Heavy Loads at Nuclear Power Plants." This document specifies acceptable measures to assure safe handling of heavy loads, which include BWR reactor vessel heads, steam dryers, and moisture separators. By NRC Generic Letter dated December 22, 1980, all licensees were requested to review their existing controls to determine the extent to which NUREG-0612 guidelines were satisfied and "to identify the changes and modifications that would be required in order to fully satisfy these guidelines." NUREG-0612 guidelines appear to constitute the controlling NRC standards for the movement of the RPV head and upper internals at CNS.

NUREG-0612 specified various acceptable alternatives, such as using a single-failure-proof handling system, analyzing the effects of a load drop,[5] or using procedures and interlock controls. For BWRs, NUREG-0612 (at pages 5-6 to 5-7) recommended either (1) that the reactor building crane be single-failure-proof or (2) the effect of heavy load drops (including vessel head and upper internals) be analyzed to show that the effects would be within specified criteria. In NUREG-0612 (at page 5-17), the Staff stated that

> . . . upon completion of modifications, required analyses, and changes to procedures to satisfy the guidelines of Section 5.1, adequate measures will be established to: (1) Reduce the potential for accidental dropping of heavy loads; (2) Reduce the potential for a heavy load to impact on spent fuel or safe shutdown equipment, should a drop occur.

NPPD responded to NUREG-0612 in a series of correspondence from 1981 to 1983. NPPD implemented NUREG-0612 by use of a single-failure-proof reactor building crane.[6] Accordingly, a heavy load drop analysis was not required to be performed under Section 5.1.4 of NUREG-0612.

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[5] NUREG-0612 (at pages 3-14 to 3-15) noted that six plants surveyed at that time had analyzed the consequences of reactor vessel internals or reactor head drop in terms of potential damage to the vessel or fuel in the core.

[6] See Exhibit F (NPPD responses to NUREG-0612 dated October 9, 1981, May 14, 1982, December 3, 1982, July 25, 1983, and September 16, 1983). Following a technical review by Franklin Research Center and issuance of a Technical Evaluation Report (May 26, 1983), the NRC accepted NPPD's implementation of NUREG-0612 guidelines in a Safety Evaluation Report dated October 31, 1983.

2. Prior NRC Interpretation of Technical Specifications

In the past, NPPD has disassembled the RPV prior to verifying secondary containment integrity by testing. If possible, testing was sometimes successfully completed prior to disassembly. If testing could not be successfully completed, RPV disassembly would not be further delayed.

Disassembly of the reactor vessel before completion of secondary containment leak testing became an issue at CNS during the 1988 refueling outage. On March 7, 1988, NPPD wanted to move forward with detensioning the RPV head, but wind conditions would not permit the secondary containment test to be conducted.[1] At the time, the Senior Resident Inspector questioned NPPD's intent to lift the RPV head prior to completing secondary containment leak testing (see Inspection Report 50-298/88-07, dated May 11, 1988, at p. 9 (excerpts included as Exhibit G)). A statement in the Bases section of the Technical Specifications appeared to be in conflict with the surveillance requirement of Technical Specification 4.7.C.1.c for secondary containment leak testing. The first of these potentially conflicting provisions -- Paragraph 4.7.C of the Bases -- stated:

> Performing these tests prior to refueling will demonstrate secondary containment capability prior to the time the primary containment is opened for refueling.

This statement in the Bases suggested that NPPD would have to establish secondary containment integrity prior to opening primary containment, which would precede vessel head detensioning and vessel disassembly. The Technical Specifications themselves -- specifically, Surveillance Requirement 4.7.C.1.c -- stated (emphasis added):

> Secondary containment capability to maintain 1/4 inch of water vacuum under calm wind [2-5 mph] conditions with a filter train flow rate of not more than 100% of building volume per day, shall be demonstrated at each refueling outage <u>prior to refueling</u>.

In response to the Senior Resident Inspector's question, the NPPD Manager of Licensing and Nuclear Safety at the time contacted the NRC Project Manager to discuss whether these apparently conflicting provisions required secondary containment integrity to be established prior to head <u>detensioning</u> or prior to actual <u>handling of irradiated fuel</u>. CNS's past interpretation had been

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[1] Memorandum to CNS Docket File from William O. Long, NRC Project Manager, dated March 28, 1993 (attached as Exhibit E).

that successful completion of the test was not required until prior to actual fuel handling.[8]

Discussions were held at the time among NPPD, the Senior Resident Inspector, Region IV management, and the Project Manager. As documented in NRC Inspection Report 88-07 (at page 9), "[i]t was agreed that the test to demonstrate secondary containment need only be performed prior to fuel movement." In a docketed memorandum, the NRC Project Manager indicated that so long as the requirements of TS 3.7.C[9] were met, CNS was not required to perform the surveillance test until immediately prior to handling of irradiated fuel, although he observed that "prudence would suggest that it be performed prior to lifting the head."[10] NPPD committed to revise the Bases to delete the potentially misleading statement in Paragraph 4.7.C indicating that the secondary containment test was to be performed prior to opening primary containment. NPPD submitted an amendment request to this effect on July 19, 1991, and the NRC approved the change as License Amendment No. 150 on November 22, 1991.

3. PRC 88-11 and the 1991 Procedure Change

On October 17, 1988, General Electric issued a Potentially Reportable Condition letter noting that standard Technical Specifications would not restrict movement of certain loads over the core or spent fuel pool during cold shutdown or refueling.[11] According to General Electric, dropping such loads onto irradiated fuel could result in an unanalyzed event. Specifically, PRC 88-11 stated:

> If containment integrity does not exist and the SGTS is not operable GE's assessment has indicated that dropping an object which possesses the same (and potentially even less) kinetic energy as that evaluated for the Fuel Handling Accident onto irradiated fuel could

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8/ Exhibit E at 2.

9/ In 1988, Technical Specification 3.7.C required CNS to suspend irradiated fuel handling operations in the secondary containment and all core alterations and activities which could reduce the shutdown margin when secondary containment could not be maintained.

10/ Exhibit E at 2.

11/ Letter from David J. Brager, General Electric Nuclear Services Manager, to Mr. G.R. Horn entitled "PRC 88-11 Mode 4 Technical Specification System Inoperability," dated October 17, 1988 (attached as Exhibit H.)

result in calculated radiological consequences in excess of those reported in the Safety Analysis Report.[12]

PRC 88-11 noted that "the NRC has evaluated a similar concern in NUREG-0612 (Control of Heavy Loads at Nuclear Power Plants) and arrived at specific recommendations relative to plant TS and plant hardware and procedure modifications." Other than the above statement, PRC 88-11 does not contain a description of the specific loads that it is intended to cover.

Several CNS personnel participated in responding to PRC 88-11. [Rick Foust, the Assistant Operations Engineering Supervisor, prepared a memorandum to Paul Ballinger, the Operations Engineering Supervisor] recommending changes to CNS procedures to address the concerns of PRC 88-11.[13] In that memorandum, the [Assistant Operations Engineering Supervisor] suggested that CNS revise several procedures, including the vessel disassembly procedures (7.4.xx series), to require Control Room verification of secondary containment integrity prior to movement of loads over irradiated fuel.

As part of NPPD's response to PRC 88-11, CNS initiated a procedure change on September 7, 1990 to alter Procedure 7.4.4 to require verification of secondary containment integrity prior to vessel disassembly.[14] Following technical review and concurrence, which occurred over a total of 10 months, the procedure change was approved mid-operating cycle by SORC on July 18, 1991.

Some CNS management personnel have indicated that the 1991 PCN was approved as a very conservative measure. They further noted that there was not a good understanding from GE on the intent and coverage of PRC 88-11. They observed that it was nevertheless approved since it allowed closure of PRC 88-11 which had been pending almost three years.

[4. 1991 Amendment of TS 3.7.C]

Prior to October 30, 1991, TS 3.7.C required CNS to maintain secondary containment integrity during all modes of plant operation unless specified conditions were met. TS 3.7.C.1.d contained one

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12/ PRC 88-11, Attachment 1 at 1.

13/ See Memorandum from R.W. Foust to P.L. Ballinger, "Response to GE PRC 88-11," (December 7, 1988 (attached as Exhibit I).

14/ See September 7, 1990 Procedure Change Notice for Revision 19 to Procedure 7.4.4 (Reactor Pressure Vessel Head Removal) (attached as Exhibit J).

of those conditions: "irradiated fuel is not being handled in secondary containment." In 1991, as part of proposed TS changes regarding the reactor building isolation ventilation radiation monitoring system, NPPD requested a change to TS 3.7.C.1.d to address concerns associated with moving loads that could damage irradiated fuel. This change was recommended by the Safety Review and Audit Board ("SRAB") during their review of the proposed Technical Specification amendment. The intent was to address relatively small loads such as local power range monitor detector assemblies (a concern prompted in part by PRC 88-11), when moved over the spent fuel pool or over the vessel after disassembly. The CNS [Radiological Manager] also recalls that NPPD was concerned with loads moved during spent fuel pool clean-up projects.[15] A fuel pool clean-up project would necessitate movement of contaminated equipment and materials (e.g., used control blades) out of the pool. Shipment casks would also have to be used in the pool as part of the clean-up project. (A fuel pool clean up project was conducted at CNS in the early 1980s and in 1992.)

In reviewing the proposed change to the Technical Specifications, CNS considered whether specific loads of concern could be specified, e.g. 150 pounds or greater. However, it was decided not to attempt to quantify the particular size of the load of concern. Instead, a more general prohibition against moving any loads with the potential to damage irradiated fuel was selected as the conservative course.

NPPD internally initiated a License Change Request on April 5, 1991. The amendment request was submitted on July 18, 1991. The NRC ultimately approved the change as Amendment 147, effective October 30, 1991.[16] Amendment 147 added a condition to the language of Technical Specification 3.7.C.1.d requiring secondary containment integrity to be maintained unless (underscored material added by TS Amendment 147):

> No irradiated fuel is being handled in the secondary containment and no loads which could potentially damage irradiated fuel are being moved in the secondary containment.

In approving the amendment, the NRC Staff Safety Evaluation stated that this aspect of TS Amendment 147 "ensures that mitigative systems are available during Amendment activities which introduce the potential for damage to irradiated fuel and provides an

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15/ A spent fuel shipment project also took place at CNS from approximately 1983 to 1987.

16/ Amendment 147 also addressed six other license change requests from NPPD.

improvement over the existing TS which addressed only fuel handling activities."[17]

III. SPECIFIC RESPONSE TO SECTION III OF DEMAND FOR INFORMATION

In accordance with Section III of the NRC's Demand for Information, the following section of this response first addresses the allegations of careless disregard by members of SORC and the former CNS Site Manager. This discussion responds to the specific findings presented in the enumerated paragraphs of Section II of the Demand for Information. Thereafter NPPD's response addresses the alleged violation of 10 C.F.R. § 50.9. Finally, NPPD explains why enforcement action should not be taken against NPPD or particular individuals for an alleged violation of TS 3.7.C.1.d, and why the NRC should have confidence in the functioning of the CNS SORC.

A. Alleged Careless Disregard by SORC Members

1. Justification for SORC's Decision

NPPD does not believe that it violated TS 3.7.C.1.d in implementing changes to the vessel disassembly procedures on March 9, 1993. Even if the NRC concludes that a violation did occur, the actions of SORC did not amount to "careless disregard" for the requirements of the Technical Specifications. As explained below, the individual members of SORC (as well as the former Site Manager) considered relevant Technical Specification requirements and made a reasoned judgment, in good faith, that the plant's actions complied with the letter and intent of the requirements. Thus, their actions cannot legally constitute "careless disregard."

Under the NRC's Enforcement Policy, "careless disregard" is a component of "willful" misconduct. The term embraces conduct beyond mere "negligence." 10 C.F.R. Part 2, Appendix C., Section IV.C. A willful violation does not exist where a licensee believes that its actions are in compliance with relevant requirements and has a reasoned justification for those actions. See, e.g., In the Matter of Wrangler Laboratories, Larson Laboratories et al., LBP-89-39, 30 NRC 746 (1989). The record in this case indicates that NPPD officials acted reasonably and in good faith in an attempt to determine whether the procedure revisions were consistent with TS 3.7.C.1.d. Under such circumstances, the NRC is justified in

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[17] "Safety Evaluation by the Office of Nuclear Reactor Regulation Related to Amendment No. 147 to Facility Operating License No. DIR-46, Nebraska Public Power District Cooper Nuclear Station," Docket No. 50-298, dated October 10, 1991 (attached as Exhibit K).

concluding that their conduct does not amount to careless disregard. Careless disregard indicates that the alleged violator did not care what its obligations were under the law. See Trans World Airlines, Inc. v. Thurston, 469 U.S. 111 (1985). It does not include a situation where licensee personnel have considered relevant requirements and reasonably believe that their actions are in compliance. Nor does it include, in NRC's words, "[v]iolations caused by simple error, misjudgment, miscalculation, ignorance, or confusion on the part of the individual." 56 Fed. Reg. 40664, 40676-677 (August 15, 1991).

NRC case law, in addressing willfulness and careless disregard, indicates that a willful violation cannot result if a licensee has considered the NRC's requirements and reached a conclusion, even if that conclusion is incorrect (which NPPD does not concede in connection with its interpretation of TS 3.7.C.1.d), that its action is consistent with requirements. Recently, in Georgia Power Co. (Vogtle Electric Generating Plant Units 1 and 2; Hatch Nuclear Plant, Units 1 and 2), 37 NRC 314, 332 (1993), the NRC concluded that a licensee's error of interpretation involving Technical Specifications "was not an example of a willful violation" by licensee senior management. In that case, the licensee had initially interpreted certain administrative controls as acceptable to fulfill the requirements of the Technical Specifications, but later reversed its position.

The NRC's deliberate misconduct rule, 10 C.F.R. 50.5, does not apply to acts resulting from careless disregard. In the proposed rule for Section 50.5 (55 Fed. Reg. 12374 (1990)), the Commission explained the "careless disregard" standard as follows:

> Careless disregard has been described as a showing of disregard for a governing statute or an indifference to its requirements . . . A finding of careless disregard indicates that the person acted with reckless indifference to the requirement, or with disregard (or utter unconcern) of the consequences or whether there was compliance. This recklessness involves, at a minimum, an unconcern as to whether a requirement was or will be violated, or a situation in which an individual blinds himself or herself to the realities or whether a violation has occurred or will occur.

The actions of SORC in this case did not rise to such "careless disregard" of requirements. Although the documentation of SORC's decision was lacking in detail, the evidence indicates that CNS personnel reviewed the basis for the 1991 procedure revisions and concluded that the proposed changes to those procedures would be consistent with the relevant requirements of TS 3.7.C.1.d. NPPD respectfully submits that where SORC was

attempting in good faith to interpret the appropriate purpose and scope of TS 3.7.C.1.d, and reached a reasoned conclusion that the procedure changes were permitted by TS 3.7.C.1.d, it would be inconsistent with the governing precedents and NRC policy to conclude that SORC or its members acted in careless disregard for requirements.

During the morning and early afternoon of March 9, 1993, **Mr. Flaherty and Mr. Ballinger** reviewed the basis for PRC 88-11, and concluded that the underlying concern was with movement of relatively small-sized loads. This understanding was confirmed with General Electric during a telephone conference on March 9 between the General Electric on-site representative and General Electric personnel in San Jose who were familiar with PRC 88-11. General Electric indicated that the PRC was intended to address movement of relatively small loads (generally less than 750 lbs.),[18] and that the PRC was not meant to apply to loads controlled under NUREG-0612. This indicated to CNS personnel that the 1991 procedural revisions were not required to cover vessel disassembly as part of the response to PRC 88-11.

In addition, CNS Engineering reviewed TS 3.7.C.1.d and reasoned that the intent of the TS was to control movement of unanalyzed loads or loads not already adequately controlled (such as a beam) over the spent fuel pool or over the core. In contrast, the lifting of the RPV head, dryer and separator had been addressed under NUREG-0612. This permitted a conclusion that the NUREG-0612 actions (use of a single-failure-proof crane and lifting devices and safe load paths) effectively precluded the potential for the RPV head and upper internals to damage irradiated fuel within the meaning of TS 3.7.C.1.d.

When SORC met on March 9, 1993 to consider the procedure changes, SORC members reviewed the requirements of TS 3.7.C.1.d. SORC members at the time recall that the portion of the meeting to consider the proposed change to Maintenance Procedure 7.4.4 lasted at least one hour, with the discussion focusing on whether lifting of the vessel head constituted movement of a load that "could potentially damage irradiated fuel." A copy of the CNS Technical Specifications was available in the SORC meeting room (as is customary), and SORC members present recall that the provisions of TS 3.7.C.1.d. on movement of loads that "could potentially damage irradiated fuel" were read and discussed during the meeting. In assessing whether lifting the vessel head constituted such a load, SORC considered the following factors presented by **Mr. Flaherty:**

- Per the record of telecon, GE clarified that the intent of PRC 88-11 was to address concerns with loads less tha..

18/ See Exhibit C at page 2; Record of Telecon dated March 9, 1993 (Exhibit L hereto).

or equal to 750 pounds, e.g., dropping a control blade on irradiated fuel. PRC 88-11 was not intended to cover heavier loads that are addressed by a plant's actions in response to NUREG-0612.

- NPPD's response to NUREG-0612 specifically addressed movement of the vessel head and upper internals.

Although the PCN form completed by [Mr. Flaherty] contained errors (see discussion below), the handwritten materials in the "Description/Justification" section of the form reflects that appropriate considerations were presented (see Exhibit C).

SORC members recall that, based on the information presented, they concluded that since lifting the RPV head and upper internals is adequately controlled by NUREG-0612 actions, these loads did not constitute a load that could potentially damage irradiated fuel within the meaning of TS 3.7.C.1.d. SORC also relied upon the 1988 memorandum on the CNS docket from the then NRC Project Manager, which interpreted the CNS Technical Specifications to require secondary containment integrity only when fuel handling begins. As noted above, this interpretation was also documented by the NRC in Inspection Report 88-07 at page 9. The PCN form (on page 2) referenced Inspection Report 88-07. The Project Manager's 1988 memorandum was apparently identified as a result of further research conducted during the course of the SORC meeting. It is not clear at exactly what time this memorandum was provided to SORC. But SORC members recall reviewing the memorandum prior to approving the procedure changes, and some have explained that this memorandum gave them additional comfort that the procedure change was consistent with Technical Specification requirements.

In these circumstances, it cannot be said that SORC acted with careless disregard for requirements. The facts indicate that SORC considered relevant factors and the applicable CNS Technical Specifications. While their interpretation may not have been the most conservative reading, SORC had a good faith rationale, based in part on the NRC's earlier interpretation of CNS's Technical Specifications, for determining that the procedure change would not violate Technical Specifications.

[2. **Response to Specific Findings Regarding SORC Actions**]

Section II of the Demand for Information (at pages 3-5) contains 10 enumerated paragraphs of findings related to the allegation of careless disregard by SORC. NPPD responds to each paragraph in turn below.

[1. **Immediately upon learning that the RPV disassembly procedural prerequisite to establish secondary containment was preventing the removal of the RPV head, the [Senior**]

[Manager of Site Support] apparently was of the view that the RPV disassembly procedural requirements were wrong and should be deleted even though no analysis had been performed to support such a deletion.

During the March 1993 outage, the [Senior Manager of Site Support, Gene Mace, was serving as Outage Director] for the day shift. Upon being informed that vessel disassembly was delayed due to the fact that secondary containment leak testing had not been successfully completed, [Mr. Mace] expressed surprise (using intemperate language) because he had not understood this to be a requirement in the past, and did not recall the 1991 revisions to Maintenance Procedure 7.4.4. [Mr. Mace] agreed with the decision to have Engineering evaluate the issue and consider any appropriate revisions to procedures.

It is unclear what is meant by "no analysis had been performed to support such a deletion." An adequate technical evaluation, with review by SORC, had to be performed to justify a deletion of procedural requirements. If this statement is a reference to the absence of a load drop analysis for the RPV head and upper internals, no such analysis was required under NUREG-0612 since CNS utilized a single-failure-proof crane to control these lifts.

2. The [Engineering Manager], who also drafted and presented the proposed Procedure Change Notices (PCN) at the March 9, 1993, SORC meeting, apparently felt pressure, despite his level of experience at CNS, to initiate the PCNs because of outage schedular considerations.

The [Engineering Manager, Jim Flaherty,] has indicated that he did feel pressed by outage schedular considerations in developing the procedure change. However, he has indicated that this pressure did not cause him to perform a less than adequate technical evaluation of the proposed procedure change. Some other SORC members have expressed the view that outage schedular considerations played some role in the plant's action. As far as NPPD is aware, no SORC members believe that outage pressures were so great as to compromise their professional judgment or otherwise caused an inappropriate decision to be made.

NPPD is nevertheless concerned that any perception was created that outage schedular considerations were a primary reason for the procedure changes. Schedule pressures are always present during a refueling outage, as at any power plant. But NPPD understands that schedule considerations must not be allowed to override safety. NPPD has thus taken this concern very seriously and has investigated whether undue schedule pressures occurred. Based on our review and discussions with the CNS personnel involved,

including all members of SORC from that time, NPPD does not believe that outage schedular considerations caused CNS Engineering or SORC to perform a less than adequate review of the proposed procedure changes. Because vessel disassembly was a critical path item and CNS management wanted to get the plant in a flooded condition, consideration of the procedure changes was done on a high priority basis, with the result that the changes were approved in one day.[19] In the circumstances, CNS management should have been more careful to communicate the technical/safety reasons for the action and to ensure that [Mr. Flaherty] did not perceive any schedule pressures.

> **3. Two of the references that the [Engineering Manager] documented in the change request to provide technical justification (TS Amendment 147 and 150 -- actually provided to the SORC) for the removal of the RPV head, dryer, and separator without secondary containment integrity being established did not provide a basis for the desired revision to the vessel disassembly procedures. On the contrary, one of the references (TS Amendment 147) best supports the interpretation that maintaining secondary containment integrity was required while moving the subject loads. These references were apparently not read by the SORC reviewers.**

It is incorrect to say that TS Amendment 150 "did not provide a basis for the desired revision to the vessel disassembly procedures." TS Amendment 150 was processed as a follow-up to the 1988 Long Memorandum and NRC Inspection Report 88-07, both of which documented the position that the secondary containment leak test only needed to be performed prior to actual fuel movement, not vessel disassembly. NPPD had committed to NRC to delete the potentially misleading statement in the Bases section to the effect that the test was to be conducted prior to opening primary

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19/ NPPD has considered the significance of the fact that the March 9, 1993 PCN was approved in one day, while the 1991 change took some 10 months to process. It should be noted that the earlier PCN was processed mid-cycle. During operation, proposed revisions to outage-related procedures are not given high priority. Operating procedures receive the greatest focus. Thus, the 10-month time frame for processing the 1991 PCN was not unusual. That PCN was also removed from routing more than once for changes, prolonging the approval process. In contrast, during refueling outages, proposed changes to outage-related procedures receive top priority. It is not unusual for an outage-related procedure to be approved in one day during an outage.

containment. TS Amendment 150 deleted this statement from the Bases. Thus this amendment actually supported the March 9, 1993 procedure change.

As for TS Amendment 147, this amendment added the language to TS 3.7.C.1.d that is at issue here -- i.e., the provision requiring secondary containment integrity when moving loads that "could potentially damage irradiated fuel." To state that TS Amendment 147 did not provide a basis for the procedure change simply begs the question. The issue confronting CNS management and SORC was whether lifting the RPV head and upper internals constituted moving loads that "could potentially damage irradiated fuel" within the meaning of the TS provision.

With respect to whether SORC members reviewed TS Amendments 147 and 150, the recollections of SORC members differ on whether the actual amendment issuances from the NRC were available and consulted during the SORC meeting. A few SORC members seem to recall that they were. The fact that the PCN form referenced the TS Amendments by number would suggest that they were available. **Mr. Flaherty** himself has indicated that he is unsure whether he provided the TS Amendment issuances to SORC, and believes that he may have actually provided NPPD's amendment applications to SORC, as opposed to the NRC's issuances. In any event, SORC members recall that the actual language of TS 3.7.C.1.d -- including the language added by TS Amendment 147 -- was read during the SORC meeting and in fact was the focus of discussions during the meeting. Thus the relevant Technical Specification requirements were reviewed by SORC.

TS Amendment 147, and the accompanying SER, did not provide any detailed discussion of the purpose and intent of the amendment. The Staff's SER (at page 2) explained that the new TS requirement "is similar to the Standard Technical Specifications (NUREG-0123, Rev. 2) which include spent fuel shipping cask handling in addition to fuel handling." (Emphasis added.) This suggests that the purpose of the amendment was to address such activities as spent fuel pool cleanup, when shipping casks are moved over the spent fuel pool. There is no discussion in TS Amendment 147 of vessel disassembly. Thus, the background and purpose of TS Amendment 147 would also seem to support the March 9, 1993 procedure changes.

In short, even assuming that SORC members did not read the actual NRC issuances that were TS Amendments 147 and 150, it appears that this would not have affected the outcome of SORC's review of the proposed procedure changes.

[4. **The [assistant engineering manager], who had been one of the primary authors of the 1991 procedure changes that had imposed the prerequisite for secondary containment prior to RPV disassembly, told the [Engineering**]

Manager], on March 9, 1993, with the [Plant Manager] present, that he did not agree with the procedure changes approved by the SORC because the movement of the RPV head, dryer, and separator without secondary containment integrity was prohibited by TS 3.7.C.1.d.

The **[Assistant Engineering Manager, Rick Foust,]** was on the night shift on March 9, 1993. Upon reporting to work on the night shift on March 9, **[Mr. Foust]** was told that SORC had approved the proposed changes and expressed disagreement to **[his supervisor, Mr. Flaherty.]** This conversation took place in the Third Floor Conference Room, and apparently was overheard by **[Mr. Gardner,]** who was not part of the conversation. **[Mr. Foust]** apparently believed that the changes were marginal from a standpoint of prudency. He noted his involvement with the earlier changes in 1991. **[Mr. Foust]** was not a SORC member at the time, and was not responsible for review of the proposed changes **[Mr. Flaherty]** initialled the PCN form for technical review by the Engineering organization).

5. The forms associated with the PCNs stated that the PCNs represented a revision to the TS and the [Engineering Manager] had marked the PCNs as involving TS changes reflected in TS Amendments 147 and 150, but the SORC members apparently did not read the relevant portions of TS Amendments 147 and 150 that were represented as justifying the PCNs.

See the discussion in Section III.C of this response for a full discussion of apparent inaccuracies in the PCN form. NPPD does not believe it is accurate to say that "the PCNs stated that the PCNs represented a revision to the TS . . . ." A box was checked on the form indicating that the proposed change "involves" a change to Technical Specifications. The use of the verb "involved" made this section of the form ambiguous. (NPPD has since changed this part of the PCN form.) As explained in Section III.D below, **[Mr. Flaherty]** checked this box in order to indicate that two existing TS amendments were relevant to the proposed change, but had no intention of indicating a need for a TS change and did not enter a prospective license amendment number as called for on the PCN form.

With respect to the statement that SORC members apparently did not read relevant portions of the two amendments, see the response to Paragraph 3 above.

6. The SORC members may have allowed themselves to be inappropriately influenced by the presence of senior management at the SORC meeting and by the SORC members' knowledge of

[**the impact of delay in proceeding with the outage work.**]

NPPD presumes that "the presence of senior management at the SORC meeting" is a reference to the fact that the former [**Site Manager, Mr. Meacham**] attended the first part of the SORC meeting on March 9, 1993. NPPD is not aware of the basis the NRC may have for suggesting that [**Mr. Meacham's**] presence inappropriately influenced any SORC member. NPPD has interviewed SORC members about this suggestion, and believes the individual responses being submitted by SORC members will confirm that they were not influenced by [**Mr. Meacham's**] presence (some do not recall [**Mr. Meacham**] being present at the meeting). In fact, when questioned on this subject, most members of SORC emphatically stated that they would not have allowed the presence of senior management to have affected their independent professional judgment. [**Mr. Meacham**] has indicated that he did not intend or attempt to influence SORC's decision-making.

With respect to SORC members' knowledge of the impact of delay in proceeding with outage work, NPPD has questioned SORC members whether they felt any pressure not to delay in reaching a decision on the proposed procedure change. No SORC member has indicated that they felt undue pressure or that their knowledge of the impact of delay inappropriately influenced their judgment. They stress that the meeting on March 9, 1993 lasted much longer than usual due to the amount of discussion of the PCN and the need to perform additional research to answer questions. Most importantly, all SORC members have indicated that they stand by their decision at the time.

[7. **The [SORC Chairman (the Plant Manager)] approved the PCNs even though he was aware that the CNS staff was not successful in identifying and locating a letter from General Electric that purportedly supported the SORC's interpretation of TS 3.7.C.1.d. Without an evaluation of the potential for fuel damage from dropping the subject loads, it was not reasonable to have concluded that the subject loads did not have the potential to damage irradiated fuel.**]

The first sentence appears to be a reference to the fact that, when this issue arose in March 1993, some NPPD managers seemed to recall that there had been a previous letter from General Electric that addressed the impact of dropping the RPV head. No such letter was ever found. It is true that at the time of the procedure changes there was no load drop analysis for the RPV head and upper internals. (Such an analysis was obtained from General Electric in May 1993.) Under NUREG-0612, no such analysis was required since CNS had chosen the option of using a single-failure-proof crane and

lifting devices. Thus the fact that a General Electric evaluation could not be located at the time of the procedure changes is immaterial.

NPPD disagrees with the statement that without a load drop analysis, it was not reasonable to have concluded that the subject loads did not have the potential to damage fuel. By adequately controlling the lifting and movement of the RPV head and upper internals through use of a single-failure-proof reactor building crane and lifting devices, NPPD was not required under NUREG-0612 to evaluate the effects of dropping these loads. Through the NUREG-0612 actions, the probability of dropping the RPV head and upper internals onto irradiated fuel is sufficiently reduced that this scenario need not be considered. CNS managers and SORC thus concluded that it was unnecessary to assume a drop of the RPV head and upper internals in assessing whether these loads had the potential to damage irradiated fuel under TS 3.7.C.1.d.

8. The SORC approved the PCNs to the RPV disassembly procedures (Maintenance Procedures 7.4.4, 7.4.5, and 7.4.6) to delete the requirement to establish secondary containment integrity while moving the RPV head, dryer, and separator.

This statement is accurate. SORC did approve the PCNs as noted.

9. On March 10, 1993, during a refueling outage, the RPV head, dryer, and separator were moved over irradiated fuel without secondary containment integrity being maintained in apparent violation of TS 3.7.C.1.d.

The RPV head and upper internals were lifted from the RPV on March 10, 1993. The lifting and movement of these components was controlled by applicable procedures, which were consistent with NUREG-0612, including consideration of safe load paths.

10. Some of the SORC members interviewed by the NRC subsequently told the NRC investigator, after reading copies of TS Amendments 147 and 150 provided by the investigator, that on the basis of the documented references (TS Amendments 147 and 150) which had been provided in support of the PCNs to the SORC on March 9, 1993, they should not have approved the PCNs or should have required analysis or research before approving them.

SORC members have acknowledged, after reading TS Amendments 147 and 150, that the way the two amendments were described on the

PCN form was not accurate, at least with respect to the TS Amendment 147. As explained in Section III.C of this response, the PCN stated that "Tech Spec changes 147 & 150 removed the requirements to demonstrate Secondary Containment capability prior to the time the Primary Containment is opened for refueling." If one puts aside the fact that the Bases are not technically part of the "requirements" of Technical Specifications, this sentence was an accurate description of TS Amendment 150. TS Amendment 147, on the other hand, added the requirements to TS 3.7.C.1.d on movement of loads with the potential to damage fuel. As explained above, NPPD does not believe that SORC was misled by this erroneous reference, since SORC members reviewed the very language of TS 3.7.C.1.d that was added by TS Amendment 147.

B. Alleged Careless Disregard by Former [Site Manager]

1. Involvement of Former [Site Manager]

The Demand for Information (at pages 7-8) alleges that the [former Site Manager, Mr. Meacham] acted with careless disregard in that he failed to ensure that SORC was correctly apprised of the impact of TS Amendments 147 and 150 and TS 3.7.C.1.d. As explained below, NPPD does not believe that [Mr. Meacham] failed in any responsibility he may have had to ensure that SORC was cognizant of relevant requirements, or that his actions otherwise constituted careless disregard.

[Mr. Meacham was the most senior NPPD manager on site] in March 1993. He was not a member of SORC at the time of the March 9, 1993 procedure change. As [Site Manager] he was naturally aware of the situation with the plant -- i.e., that outage activities, specifically vessel disassembly, had been delayed due to the inability to obtain a successful secondary containment leak test. In reviewing the situation at the time, [Mr. Meacham] considered it appropriate to evaluate why procedures had been changed in 1991 (when he was [Chairman of SORC] to require verification of secondary containment integrity as a prerequisite to lifting the head. Since he knew that this had not been a specific requirement during previous refueling outages, he agreed with having the [Engineering Manager] review the basis for the 1991 procedure change.

In this regard, [Mr. Meacham] was primarily concerned with safety considerations from the standpoint of shutdown risk. The plant was in a shutdown mode and beginning preparations for refueling, with reduced water inventory in the vessel, high core decay heat level, primary containment defeated, and only part of the Emergency Core Cooling system available due to other testing. [Mr. Meacham] considered that this is a relatively high risk condition for a BWR during shutdown, since a loss of shutdown cooling could cause boiling within a very short time. The refueling cavity could not be flooded up until after disassembly of

the upper RPV internals. [Mr. Meacham's] chief concern was to get the plant to a condition where the refueling cavity was flooded. [Mr. Meacham] recalls discussing these considerations at the time with [Guy Horn, Vice President-Nuclear, and Rick Gardner, the Plant Manager]. [Mr. Gardner] and other members of SORC have confirmed that shutdown risk considerations were part of the reasoning behind the procedure changes on March 9, 1993. On this basis, NPPD management made the decision to initiate changes to the Maintenance Procedures to proceed with vessel disassembly, so that the cavity could be flooded up and the reactor brought into a more safe condition. Proceeding with vessel disassembly, after reviewing the aforementioned documentation, was considered by NPPD management to be preferable from a safety perspective to remaining in an unflooded condition with high decay heat until a successful secondary containment leak test could be completed.

Although not a SORC member, [Mr. Meacham] attended the first session of the SORC meeting on March 9, 1993, during which the change to Maintenance Procedure 7.4.4 was approved. [Mr. Meacham] did not attend the second part of the meeting.) He indicates that he did so in order to be sure he understood and was satisfied with the basis for the proposed change to procedures. He remembers participating in the discussion only to the extent of asking questions to explore the technical and regulatory basis for the procedure change. [Mr. Meacham] indicates that he did not advocate any particular position with respect to the proposed change. As far as NPPD is aware, no member of SORC who was present at that meeting has indicated that [Mr. Meacham's] presence in any way influenced the member's independent judgment regarding the merits of the change. NPPD is also unaware of any evidence that [Mr. Meacham] by his statements or actions during the meeting, attempted to influence the outcome of SORC's review or applied any pressure to SORC members to achieve a particular result. In fact, some of the SORC members do not even recall that [Mr. Meacham] attended the meeting.

With respect to the technical basis for the change to Maintenance Procedure 7.4.4, [Mr. Meacham] recalls that [Mr. Flaherty] provided NUREG-0612 to SORC for review, and discussed the clarification received from General Electric as to the intent of PRC 88-11. This information was significant from Mr. Meacham's perspective. PRC 88-11 had been the basis for the procedure change implemented in 1991, which [Mr. Meacham approved as SORC Chairman] at the time.

At the SORC meeting, [Mr. Meacham] recalls that [Mr. Flaherty] and the other SORC members concluded that since the RPV head lift is adequately addressed by NUREG-0612, the underlying concern of PRC 88-11 would not apply. He agreed with this assessment and considered that dropping the RPV head was not a credible scenario due to the use of a single-failure-proof crane and lifting devices. In this connection, [Mr. Meacham] recalls that SORC discussed the

language of TS 3.7.C.1.d and concluded that TS 3.7.C.1.d did not prohibit the procedure change since movement of the RPV head was adequately controlled by NUREG-0612 and thus did not present the potential to damage irradiated fuel.

[Mr. Meacham] recalls that SORC considered the record of telecon with General Electric, which he viewed as confirming his and SORC's understanding of the relationship between NUREG-0612 and PRC 88-11. In addition, [Mr. Meacham] remembers that SORC considered the Technical Specification interpretation docketed by NRC Project Manager William Long.[20]

[2. **Response to Specific Findings Regarding Former [Site Manager]**]

[1. **The CNS [Site Manager], who was the [SORC Chairman] in 1991, had presided over the meeting that added the requirement to the vessel disassembly procedures to establish secondary containment integrity prior to moving the RPV head, dryer, and separator. Therefore, he know or should have known that TS Amendment 147 added the requirement to maintain secondary containment integrity while moving loads in the secondary containment which could potentially damage irradiated fuel.**]

[Mr. Meacham, the former CNS Site Manager] was aware that TS Amendment 147 had added this requirement. During the portion of the SORC meeting on March 9, 1993 attended by [Mr. Meacham,] the

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20/ [Mr. Meacham] did not attend the second portion of the SORC meeting on March 9, 1993, when the changes to permit lifting of the dryer and separator were approved. It was [Mr. Meacham's] understanding from the portion of the meeting he attended that vessel disassembly would proceed as in recent outages. Beginning in 1988, the practice at CNS had been to lift the head and dryer, but to leave the separator in until after successful secondary containment testing was completed. This was considered to be a prudent precaution against the unlikely event of some object falling into the RPV. [Mr. Meacham] was surprised to learn the next day (March 10) that the separator had also been removed along with the RPV head and dryer. He expressed displeasure regarding this to the [Plant Manager (Mr. Gardner)]; however he did not believe that the actions presented a technical or safety problem, although it was not necessarily the most prudent action to take. [Mr. Gardner] was unaware of the past practice of leaving the separator in, since he had not been involved in discussions during 1988 when this practice was established.

discussion focused on the language of TS 3.7.C.1.D that was added by TS Amendment 147.

> **2. Notwithstanding the CNS [Site Manager's] attendance at the March 9, 1993, SORC meeting at which the PCNs, including the annotations that the PCNs involved a change to the TS and that TS Amendments 147 and 150 were documented in Section 5 of the PCNs, were discussed, the CNS Site Manager told the NRC investigator that he did not observe the PCN notations about TS Amendments 147 and 150.**

Mr. Meacham attended a portion of the SORC meeting on March 9, 1993 as an observer. He was not a member of SORC at that time. He also was not responsible for a technical review of the PCN and did not initial or sign the PCN (see Exhibit C). Because he was neither a member of SORC nor a technical reviewer, his review of the PCN form would not have been required.

With respect to the indication in Section 5 of the PCN that a Technical Specification change was involved, **Mr. Meacham** has noted that this indication was obviously in error since SORC would have insisted on having an approved Technical Specification revision before considering the procedure change. Nevertheless, **Mr. Meacham** has indicated that he would not have signed the form, since he felt it had been improperly completed.

> **3. The CNS [Site Manager] was the most senior NPPD manager onsite in March 1993, and he had many years of operations experience at CNS. On the basis of his knowledge and experience, which included his direct involvement with TS Amendment 147, he should have, in his oversight role at the March 9, 1993, SORC meeting, ensured that the SORC members either reviewed or discussed the relationship among TS Amendment 147, TS Amendment 150, and TS 3.7.C.1.d.**

As explained above, SORC's discussions at the March 9, 1993 meeting focused on the applicable provisions of TS 3.7.C.1.d, which had been added by TS Amendment 147. **Mr. Meacham** had been involved with TS Amendment 147 and recalls discussion at the meeting on TS 3.7.C.1.d.

With respect to TS Amendment 147, **Mr. Meacham** recalls that the Technical Specification change was primarily to address the reactor building vent radiation monitors, which are utilized in fuel handling accident scenarios. **Mr. Meacham** recalls that SRAB wanted to include words in the Technical Specifications on movement of loads carried over the spent fuel pool or loads (such as a beam)

moved over the core after the RPV head was off. He does not believe that the words were added to TS 3.7.C.1.d to address vessel disassembly. [Mr. Meacham] has indicated that he had no objection to adding this change in the amendment application since the provision was conservative in his view.

[C. Alleged Violation of 10 C.F.R. § 50.9]

The NRC Demand for Information dated November 10, 1994, at pages 6, 9 and 10, alleges that a violation of 10 C.F.R. § 50.9 occurred as a result of inaccurate information documented on the Procedure Change Notice form reviewed by SORC on March 9, 1993. NPPD concurs that the information should have been complete and accurate in all material respects, but was partially in error and potentially confusing. After careful review of the events, NPPD has concluded that: the errors essentially were harmless and the errors do not appear to constitute material inaccuracies. Accordingly, NPPD respectfully suggests that the NRC would be justified in applying a rule of reason in assessing the inaccuracies contained in the Procedure Change Notice, and should conclude that the inaccuracies do not constitute a violation of 10 C.F.R. § 50.9.

In any event, NPPD does not believe that the inaccuracies involved any deliberate actions involving an intent to mislead SORC or any actions that could reasonably be characterized as involving careless disregard.

[1. Explanation of PCN Form Inaccuracies]

The NRC is evidently concerned with inaccuracies contained in the March 9, 1993 Procedure Change Notice (PCN) form. These include: (1) the indication that the procedure revisions involve a change to the Technical Specifications (Section 5) and (2) the following statement (Section 8(6)):

> Tech. Spec. changes 147 & 150 removed the requirements to demonstrate Secondary Containment capability prior to the time the Primary Containment is opened for refueling.

As for PCN Section 5, the author of the PCN [Jim Flaherty] did not intend to indicate that the procedure revisions were prohibited by existing Technical Specifications such that a change to the Technical Specifications was necessary. That he had no such intent is illustrated by the references to TS Amendments 147 and 150 in lieu of his recording a License Amendment Number in the space provided in Section 5. In this case, [Mr. Flaherty] has explained that his intention was to identify to SORC members that his research had identified prior changes to the Technical Specifications that appeared to be generally applicable as

references for the procedures. There appears to be little question that SORC members understood this to be the case. (Because of difficulties with Section 5 of the PCN form as illustrated by this event and in the past, NPPD has revised the PCN form to eliminate the possibility for any ambiguities of this nature, by providing for a clear indication on the form that the procedure revisions either must be accompanied by or need not be accompanied by a change to the Technical Specifications.)

As for Section 8(6) of the PCN form, NPPD concurs that TS Amendment 147 did not "remove" requirements as stated. It is useful to briefly review TS Amendments 147 and 150 to ascertain the degree of inaccuracy of the above quoted statement.

TS Amendment 150 involved the deletion of the third sentence on p. 182, TS 4.7.C, Bases, which was a potentially confusing or misleading statement that indicated that testing to verify secondary containment integrity was required to be performed prior to opening of primary containment. The deletion of the statement was recommended by Mr. William O. Long, NRC Project Manager, in a docketed memorandum dated March 28, 1988 (the memorandum provided an interpretation that the testing "need not be conducted until just prior to handling of irradiated fuel. . . ."). [21] Since the "bases" are not part of the Technical Specifications, 10 C.F.R. § 50.36(a), and accordingly are not requirements, it may be true that in the most literal sense TS Amendment 150 did not "remove" any requirements, contrary to the Procedure Change Notice. However, this could be considered a hypertechnical view.

It can be said that TS Amendment 147 did not "remove" any requirements to demonstrate secondary containment capability prior to the time the primary containment is opened for refueling. TS Amendment 147, which was approved by NRC on October 10, 1991, added the words "and no loads which could potentially damage irradiated fuel are being moved in the secondary containment" to TS 3.7.C.1.d. [22] As explained in detail in this response, NPPD's

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21/ The NRC Safety Evaluation for TS Amendment 150 (Exhibit O) at p. 1, acknowledges that the change was necessary "[t]o correct the apparent conflict between the Paragraph 4.7.C of the Bases and 4.7.C.1.c, Surveillance Requirements" and is "[c]onsistent with the recommendation from the Staff dated March 28, 1988 to the licensee [Exhibit E]."

22/ It can be seen that TS Amendment 147 did not address the opening of primary containment for refueling, as suggested on the Procedure Change Notice. In retrospect, the statement at issue would have been accurate if it had included only the reference to TS Amendment 150 (which deleted Bases information to eliminate confusion concerning the timing of the secondary containment integrity test) and not the reference to TS

application (July 18, 1991) did not specify that the loads in question involved the RPV disassembly loads (i.e., RPV head, dryer, separator). Neither does TS 3.7.C.1.d itself expressly state that movement of loads associated with RPV disassembly (i.e., head, dryer, separator) is prohibited without first verifying secondary containment integrity.

NPPD's focus in TS Amendment 147 (see the July 18, 1991 application, Attachment at p. 3) was on the addition of controls to ensure adequate means of mitigating the effects of an accidental breach of an irradiated fuel barrier, rather than on precisely defining loads that could potentially damage irradiated fuel if moved in the secondary containment. Indeed, NRC's Safety Evaluation for TS Amendment 147 did not mention RPV disassembly loads by name and reflected NPPD's primary motivation of ensuring that mitigative systems are available during those activities (i.e., in addition to fuel handling activities) which introduce the potential for damage to irradiated fuel.

NPPD concludes that the mischaracterization of TS Amendment 147 on the March 9, 1993 Procedure Change Notice was inadvertent and not done with an intent to mislead a reviewer, and in fact, did not mislead SORC reviewers.

[2. Inaccuracies Not Material]

As noted, [Mr. Flaherty] indicated that the reference to TS Amendment 147 in the PCN form, although an inaccurate characterization of the amendment, was intended to inform SORC that TS Amendment 147 was relevant to the procedures. SORC considered the language of TS 3.7.C.1.d, and thus its review was not adversely affected by the mischaracterization of TS Amendment 147. SORC deliberated on the issue of whether RPV disassembly loads were the type of loads referred to in TS 3.7.C.1.d.

Accordingly, the errors do not appear to constitute material inaccuracies. [Mr. Flaherty's] characterization of TS Amendments 147 and 150 should not be viewed in isolation: it is the first in a series of statements which he added, comprising Section 8(6) of the PCN.

- The second sentence "See IR 88-07 Response." appears immediately after the reference to TS Amendments 147 and 150 on the Procedure Change Notice. Page 9 of NRC Inspection Report 50-298/88-07, dated May 11, 1988, states that:

Amendment 147 (which added qualifying language to TS 3.7.C.1.d).

It was agreed that the test to demonstrate secondary containment need only be performed prior to fuel movement. The licensee committed to reviewing TS to determine if a change to TS 4.7.C Bases was required.

(As noted above, NPPD completed its commitment via TS Amendment 150.)

- The next sentence indicates that GE was consulted and interpreted PRC 88-11 as only addressing loads of 750 lbs. or less (i.e., not RPV disassembly loads).

- The next four sentences indicate that NUREG-0612 (in response to which NPPD had implemented changes approved by the NRC) addressed heavier loads of 1000 lbs. or greater, that NPPD had responded to NUREG-0612 (with references given to NPPD's submittals) and that NUREG-0612 specifically addressed removal of the RPV head.

These statements, viewed in their entire context in relation to the PCN form, indicate that [Mr. Flaherty] endeavored to disclose to SORC members the results of Engineering's research on the proposed procedure changes, including NUREG-0612, PRC 88-11 and NRC Inspection Report 50-298/88-07. NPPD submits that, viewed in proper context, the PCN form evinces an intent to apprise SORC of the relevant information pertaining to the procedures and proposed revisions thereto. Even if they were not fully aware of all background aspects of TS Amendments 147 and 150, it seems clear that SORC members were aware of the applicable requirements for secondary containment integrity set forth in Technical Specification 3.7.C.1.d (added by TS Amendment 147) and sought to properly apply them to the movement of RPV disassembly loads inside secondary containment.

It is important to remember that SORC approved the revisions during the March 9, 1993 meeting, following relatively lengthy discussion on the issues. This is not a case where SORC members viewed the PCN privately without the benefit of collegial discussion. While the characterization of TS Amendment 147 was inaccurate, it appears that SORC members were aware that TS Amendments 147 and 150 provided background information. SORC's focus was properly on the substantive requirements of TS 3.7.C.1.d, as applied to the movement of RPV disassembly loads inside secondary containment.

For these reasons, while NPPD is mindful of the need for completeness and accuracy in Procedure Change Notices, we do not believe that the inaccurate characterization of TS Amendment 147

was material. NPPD submits that any potential confusion resulting from the reference to TS Amendment 147 was tempered as the natural result of SORC's deliberation on March 9, 1993, when it evaluated the requirements of TS 3.7.C.1.d concerning maintenance of secondary containment integrity. It is an oversimplification for the NRC to suggest (see DFI at p. 6) that TS Amendments 147 and 150 do not provide a basis for removing the procedural requirement to maintain secondary containment integrity while moving the RPV head, dryer and separator. In fact, the references to TS Amendments 147 and 150, NRC Inspection Report 50-298/88-07, PRC 88-11 and NUREG-0612 on the Procedure Change Notice, provide a relatively complete itemization of the building blocks for SORC's action on March 9, 1993.

In assessing a licensee's communication to determine whether the requirements of 10 C.F.R. § 50.9(a) with respect to accuracy and completeness are satisfied, the Commission has stated its intention to apply a rule of reason. 52 Fed. Reg. 49,362, 49,366, col. 3 (December 31, 1987) (final rule). The Commission there noted that, where an NRC reviewer determines to seek additional information to clarify his or her understanding of information provided by a licensee:

> [T]his type of inquiry by the NRC does not necessarily mean that incomplete information which would violate the rule has been submitted.

Arguably, the statement concerning TS Amendment 147 "removing" requirements could influence a reviewer or the NRC in the conduct of its regulatory responsibilities. However, in the collegial environment of the meeting on March 9, 1993, SORC was able to understand the pertinent requirements of TS 3.7.C.1.d. In any event, it is NPPD's conclusion that TS 3.7.C.1.d, including the language added by TS Amendment 147, should not be interpreted in isolation, in a manner not consistent with its purpose or history, to prohibit the procedure changes approved by SORC (especially when viewed in connection with the NRC docketed memorandum dated March 28, 1988).

[3. Response to NRC Specific Findings On § 50.9]

The Demand for Information enumerates five paragraphs on pages 6-7, each containing a specific finding concerning the alleged violation of 10 C.F.R. § 50.9. We address each finding in turn below:

> **1. The PCNs are required to be maintained by license conditions. Specifically, TS 6.2.1.A.4.a requires, in part, that the SORC review all proposed changes to maintenance procedures. TS 6.4.1.E requires**

that records of changes to plant procedures be retained for at least 5 years.

NPPD agrees with this statement.

2. The PCNs, dated March 9, 1993, that pertain to Maintenance Procedures 7.4.4, 7.4.5, and 7.4.6, stated that TS Amendments 147 and 150 removed the requirements to demonstrate secondary containment capability prior to the time the primary containment is opened for refueling.

NPPD agrees that the PCNs contained the statements noted in this finding. As explained more fully above, NPPD concurs that TS Amendment 147 did not "remove" requirements as stated. The statement on the PCNs, however, could be considered a fair characterization of TS Amendment 150.

In this connection, **Mr. Flaherty** indicated that the reference to TS Amendment 147, although an inaccurate characterization of the amendment, was intended to inform SORC that TS Amendment 147 was relevant to the procedures. SORC considered the language of TS 3.7.C.1.d, and thus its review was not adversely affected by the mischaracterization of TS Amendment 147.

3. Section 5 of these PCNs was annotated as involving a change to the TS, and TS Amendments 147 and 150 were listed as being applicable or related to the TS change.

NPPD disagrees with this finding in its characterization of TS Amendments 147 and 150 as appearing in Section 5 of the PCNs.

The inclusion of the reference to TS Amendments 147 and 150 was intended "as being applicable or related to the TS change," as the finding states, in the sense that **Mr. Flaherty** did not intend to indicate that a TS change was necessary in conjunction with the procedure revisions.

That **Mr. Flaherty** had no such intent is illustrated by the references to TS Amendments 147 and 150 <u>in lieu of</u> recording a <u>prospective</u> "License Amendment Number" (which was not considered necessary in connection with the procedure changes) in the space provided in Section 5 of the PCNs. **Mr. Flaherty** has explained that his intention was to indicate to SORC members that his research had identified prior changes to the Technical Specifications that appeared to be relevant to the procedures. There appears to be little question that SORC members understood this to be the case.

4. TS Amendments 147 and 150 did not relax or remove any requirements relative to maintaining secondary containment integrity while moving loads in the

secondary containment which could potentially damage irradiated fuel, which was the purpose of the proposed (1993) PCNs.

To reiterate, as explained above NPPD concurs that TS Amendment 147 added language to TS 3.7.C.1.d and did not "remove" requirements as stated. The statement, however, could be considered a fair characterization of TS Amendment 150, because that amendment deleted language from the Bases of the Technical Specifications.

TS Amendment 147, which was approved by NRC on October 10, 1991, added the words "and no loads which could potentially damage irradiated fuel are being moved in the secondary containment" to TS 3.7.C.1.d. NPPD's application (July 18, 1991) did not specify that the loads in question involved the RPV disassembly loads (i.e., RPV head, dryer, separator). Neither does TS 3.7.C.1.d itself expressly state that movement of loads associated with RPV disassembly (i.e., head, dryer, separator) is prohibited without first verifying secondary containment integrity. Whether or not RPV disassembly loads are addressed by TS 3.7.C.1.d (as amended by TS Amendment 147), was expressly considered by SORC at the March 9, 1993 meeting.

Moreover, the finding is inaccurate to the extent that it suggests that the purpose of the proposed (1993) PCNs was to relax or remove any requirements contained in the Technical Specifications. The purpose of the PCNs was to revise plant procedures, and while the PCNs reflected **Mr. Flaherty's** intent to inform SORC that TS Amendments 147 and 150 were relevant to those revisions to plant procedures, his intent was not to state as a matter of fact that a TS change was necessary.

5. TS Amendment 147 added TS 3.7.C.1.d to require that secondary containment integrity be maintained while moving loads in the secondary containment which could potentially damage irradiated fuel.

More precisely, as noted above, TS Amendment 147, which was approved by NRC on October 10, 1991, added the words "and no loads which could potentially damage irradiated fuel are being moved in the secondary containment" to the existing TS 3.7.C.1.d.

NPPD's focus in TS Amendment 147 was on the addition of controls to ensure adequate means of mitigating the effects of an accidental breach of an irradiated fuel barrier, rather than on precisely defining loads that could potentially damage irradiated fuel if moved in the secondary containment. NRC's Safety Evaluation for TS Amendment 147 did not mention RPV disassembly loads by name and reflected NPPD's primary motivation of ensuring that mitigative systems are available during those activities

(i.e., in addition to fuel handling activities) which introduce the potential for damage to irradiated fuel.

D. Explanation Of Why NRC Enforcement Action Should Not Be Taken

Section III.A.1 of the Demand for Information requests an explanation of why the NRC should not take enforcement action for apparent violations of 10 C.F.R. § 50.9 and TS 3.7.C.1.d, including enforcement action to modify NPPD's license to prohibit the former CNS Site Manager and any CNS SORC Members from being involved in licensed activities. NPPD provides an explanation on each of these points below.

1. Apparent Violation of 10 C.F.R. § 50.9

As explained above, NPPD agrees that there were inaccuracies in the PCN form, but does not believe that the form was inaccurate in a "material" respect within the meaning of 10 C.F.R. § 50.9. The inaccuracies in the PCN do not appear to have adversely affected the outcome of SORC's deliberations, since SORC members were cognizant of the pertinent provisions of TS 3.7.C.1.d. Furthermore, as explained above, it is NPPD's conclusion that the inaccuracies in the PCN form were not made with any intent to mislead reviewers or with careless disregard for requirements. When viewed in its entirety, the PCN form reflects that Mr. Flaherty researched the documentation relevant to the proposed procedure change. Accordingly, even if the NRC concludes that a violation of 10 C.F.R. § 50.9 occurred because of alleged inaccuracies in the PCN, NPPD does not believe that the violation resulted from careless disregard or that it had safety significance.

2. Apparent Violation of TS 3.7.C.1.d

In light of the Demand for Information, NPPD has reviewed the applicable Technical Specifications to assess whether a violation of TS 3.7.C.1.d occurred. While it appears in hindsight that the interpretation made during the March 1993 outage may not have been the most conservative possible reading of the TS provisions, NPPD does not believe that TS 3.7.C.1.d was violated, especially when the purpose and intent of the TS provision is considered.

The relevant language of TS 3.7.C.1.d., which includes language added by TS Amendment 147 in July 1991 (underscored below), requires secondary containment integrity to be maintained unless several conditions are satisfied, including:

> No irradiated fuel is being handled in the secondary containment <u>and no loads which could potentially damage irradiated fuel are being moved in the secondary containment</u>.

Documentation of the reasons for the 1991 TS change implementing this requirement is sparse. As noted above, the provision was added at the suggestion of SRAB during a meeting in 1991. The amendment request itself did not explain the intent of the request in any detail. As noted above, the TS Amendment application, dated July 18, 1991, stated that although the accident analysis for a fuel handling event is based on a postulated dropping of a fuel bundle onto the core or spent fuel pool, "other scenarios exist which could potentially cause a breach of an irradiated fuel barrier, specifically, accidental dropping of other loads onto irradiated fuel." The TS Bases were revised by the request simply to repeat that secondary containment integrity is required "during refueling, and during movement of loads which could potentially damage irradiated fuel in the secondary containment." The amendment application does not address movement of the RPV head and upper internals. There was certainly no clear indication of an intent to change the prior practices at CNS with respect to vessel disassembly, which had been accepted by the NRC in 1988.

NPPD management involved in the 1991 TS change recall that the language was added to TS 3.7.C in part based on concerns noted in PRC 88-11, and was primarily aimed at controlling movement of relatively small loads over the spent fuel pool or over the vessel after disassembly. The intent was to address loads of the same or lesser size as a fuel bundle (the load analyzed for a fuel handling accident and addressed in PRC 88-11). While consideration was given to specifying a particular sized load in the Technical Specifications, NPPD could not establish one particular weight of concern. In lieu of specifying a particular load weight, NPPD took the conservative course of generally prohibiting movement of loads which "could potentially damage irradiated fuel."

In this regard, NPPD notes that the 1991 PCN was signed by the SORC chairman on the same day that NPPD submitted the TS amendment request to the NRC. It might thus appear that the 1991 PCN was intended to implement that portion of TS Amendment 147 which addressed movement of loads. However, despite the fact that PRC 88-11 prompted both the PCN and part of the Technical Specification amendment, NPPD managers indicate that there was not a direct connection between the two.

In finding that the change to Maintenance Procedure 7.4.4 was consistent with Technical Specifications, NPPD management and SORC reasoned that compliance with NUREG-0612 guidelines, which specifically address the vessel head, dryer and separator, effectively eliminates the potential of those loads to damage irradiated fuel. The purpose of NUREG-0612 was to control movement of these heavy loads inside containment over the reactor vessel, the spent fuel pool and safety-related equipment. As noted above, NUREG-0612 (at page 5-6) recommended as acceptable alternatives either a single-failure-proof design of the reactor building crane or a load drop analysis to demonstrate that the effects of dropping

heavy loads such as the vessel head and upper internals would remain within specified criteria. NPPD's responses to NUREG-0612 indicate that NPPD chose to utilize a single-failure proof design of the reactor building crane (in accordance with NUREG-0612 recommendations). Accordingly, it is reasonable to conclude that failure during vessel head lift is not a credible scenario.

NPPD's interpretation appears consistent with prior Staff positions interpreting the Technical Specifications. As noted above, the 1988 memorandum from NRC Project Manager William O. Long to CNS's docket file stated that NPPD's Technical Specifications did not require performance of the TS 4.7.C secondary containment surveillance test until actual handling of irradiated fuel was to begin. Therefore, vessel disassembly could proceed prior to completing the secondary containment leak test so long as the test was successfully completed "prior to refueling." NRC Inspection Report 88-07 also documented this interpretation. While TS Amendment 147 was issued in 1991, NPPD did not intend to change its prior practices for RPV disassembly, which the NRC has accepted.

NPPD acknowledges that the language of TS 3.7.C.1.d -- "no loads which could potentially damage irradiated fuel" -- might be considered unclear in the sense that it provides a functional standard, as opposed to a definite quantifiable standard, for determining which loads are covered. A judgment must be made as to whether a load could potentially damage irradiated fuel. The language is thus susceptible to differing constructions. Nevertheless, NPPD's view that the language did not preclude vessel disassembly appears reasonable in light of the circumstances outlined above, including the controls of NUREG-0612.

NPPD has proposed amendments to the CNS Technical Specifications, among other things, to conform to certain aspects of the BWR Standard Technical Specifications for secondary containment integrity requirements. Specifically, Proposed Change No. 106, dated August 31, 1993, would add two conditions that must be met in order not to require secondary containment integrity:

- that no core alterations are taking place with irradiated fuel in the vessel, and
- no operations with a potential for draining the reactor vessel are taking place with irradiated fuel in the vessel.

This would effectively replace the condition regarding the movement of loads which could potentially damage irradiated fuel (that condition is not contained in Standard Technical Specifications).

For these reasons, NPPD does not believe that enforcement action is warranted for a violation of TS 3.7.C.1.d.

3. Enforcement Action Against Former Site Manager

Any NRC enforcement action against the former Site Manager would be inappropriate. In NPPD's view, any such action would be punitive and serve no purpose. Under the NRC's Enforcement Policy, 10 C.F.R. Part 2, Appendix C, Section VIII, enforcement actions involving individuals "are significant personnel actions, which will be closely controlled and judiciously applied." Enforcement sanctions against an individual can have a damaging impact on the person's reputation and career. NPPD submits that the facts of this case do not warrant the extraordinary step of enforcement action against any particular individual. Such an action could effectively destroy the career of the individual as a result of subjective analysis of a single isolated action.

As explained in detail in this response, NPPD does not believe a violation of Technical Specifications occurred. Even if the NRC disagrees as to the interpretation of TS 3.7.C.1.d, Mr. Meacham did not act with careless disregard for requirements. Mr. Meacham has indicated that he was cognizant of the requirements of TS 3.7.C.1.d when he agreed with the March 9, 1993 change to Maintenance Procedure 7.4.4, and reached a judgment, in good faith, that the change was consistent with Technical Specifications. He has also emphasized that he was motivated at the time by concerns with shutdown risk and wanted to move the plant from a reduced inventory situation. Further, NPPD does not believe that Mr. Meacham took any inappropriate actions to influence SORC's review. In these circumstances, even if the NRC disagrees technically with NPPD's actions or with the interpretation of TS 3.7.C.1.d, it cannot be said that Mr. Meacham acted with careless disregard.

Mr. Meacham is no longer Site Manager. This past summer he was reassigned to a position in the General Office in Columbus, Nebraska assisting the Vice President - Nuclear. Mr. Meacham recently accepted a temporary assignment with NPPD's General Office and does not have any responsibility for nuclear activities at this time. Mr. Meacham has served NPPD for 11 years as a nuclear professional and has been a capable senior manager. As a result of the performance problems at CNS, NPPD has implemented a number of management changes, including the addition of a Site Manager. Mr. Meacham was accordingly reassigned in August 1994 to the position in the General Office. We believe, based on his performance during his 11 year career with NPPD and our assessment of his actions in connection with the subject of this enforcement matter, that he can continue to contribute effectively to NPPD's nuclear program. Thus, NPPD should not be deprived of the ability to utilize Mr. Meacham's considerable experience and abilities within the nuclear organization should that become necessary or desirable.

Accordingly, NPPD believes that any modification of its license such as that contemplated in the Demand for Information is unwarranted. NPPD understands that [Mr. Meacham] is providing a personal response to the Demand for Information which will explain in more detail the hardship that would be caused by any enforcement action against him.

[4. Enforcement Action Against Individual Members of SORC]

NPPD also does not believe that enforcement action is warranted against any individual SORC member. As explained in detail in this response, SORC members, during the meeting on March 9, 1993, read and considered the pertinent requirements of TS 3.7.C.1.d and other relevant considerations. On the basis of the information considered, SORC reached a judgment that the proposed procedure changes were consistent with TS 3.7.C.1.d and technically justified. In these circumstances, even if the NRC disagrees with the conclusions reached or believes that SORC's actions were not sufficiently conservative, it would be unfair to label SORC's actions as "careless disregard."

NPPD has found the performance and judgment of some of the individuals to be lacking, although not based on the isolated instance of the March 9, 1993 procedure change. NPPD has taken appropriate action with respect to these individuals; for example, by reassigning them to other positions or areas that are better suited for their particular strengths and weaknesses. Nevertheless, NPPD considers that all the members of SORC in March of 1993 are capable nuclear professionals and should be allowed to utilize their experience and abilities in the nuclear field. For example, of the senior managers involved in approving the March 9, 1993 procedure changes,[23] [Rick Gardner, who was Plant Manager and SORC Chairman in March 1993, has been reassigned to the position of Maintenance Manager.] [He remains a member of SORC, but is no longer Chairman.] [Mr. Gardner has over 20 years of experience within the nuclear organization at CNS.] [Mike Estes, who was Acting Senior Manager of Operations in March 1993, is no longer employed by NPPD.] [In addition, Jim Flaherty, the Engineering Manager in March 1993, who initiated the PCN, has been reassigned to the position of Corrective Action Program Supervisor.] The need for any additional personnel actions is still under evaluation.

23/ NPPD understands that most, if not all, of the members of SORC who were provided copies of the Demand for Information will be providing individual responses that give details on employment history and other background, and explain the impact that enforcement action could have. Our response, therefore, will not address the particular situation of each individual.

Reassignments and other personnel actions are in and of themselves significant steps that affect the lives of individuals. We ask the NRC to consider the impact of actions already taken by NPPD in evaluating the need for additional enforcement action against individuals. NPPD firmly believes that the serious step of modifying its license to bar individual SORC members from involvement in licensed activities at CNS is not warranted by the facts of this case.

E. Reasons Why NRC Should Have Confidence In the CNS SORC

Section III of the Demand for Information asks NPPD to explain why the NRC should have confidence that the CNS SORC is capable of adequately performing safety oversight responsibilities.[24/] NPPD's actions to improve the effectiveness of SORC will be addressed in more detail in NPPD's response to the Regional Administrator's letter of August 25, 1994. A number of significant improvements have been and are being made as part of the Performance Improvement Plan Phase 1 Action Plan, Project 1.2, "Improve SORC Effectiveness," to enhance the effectiveness of SORC. Some of these actions are detailed in the cover letter to which this response is attached.

24/ The NRC makes the same request regarding the former [Site Manager.] As explained above, in his [new position, the former Site Manager] no longer has nuclear oversight responsibilities. In any event, the reasons why the NRC should have confidence that the [former Site Manager] could adequately carry out any such responsibilities have been explained above.

07185.1771

36B

TEMPORARY PROCEDURE CHANGE NOTICE	ATTACHMENT 1

Ensure existing TPCN is not in effect or has been properly dispositioned.

Date: 3/8/93 Page 1 of ____

Proc No: 7.4.4 Current Rev: 19

Title: REACTOR PRESSURE VESSEL HEAD REMOVAL

DISTRIBUTION
(Clearly designate destination)

- [x] Responsible Manager (original)
- [x] Originator (1 copy)
- [x] SRG Supervisor (1 copy)
- [ ] Surveillance Coordinator*
- [ ] Control Room*
- [ ] Other (CNS or CO): ____

* Provide copy at discretion of SS

DESCRIPTION/JUSTIFICATION (attach marked up copy): Remove step 7.4 from the prerequisites and insert into step 8.1.27

PCN required? [x] YES - Initiate PCN or record date PCN was submitted: N/A
[ ] NO

Emergency Plan or EPIP change involved? [ ] YES*; [x] NO *If YES, obtain EP review

Originator: J Eastwood Date: 3/8/93

Originator's Dept Supervisor: M Sweeney Date: 3/8/93

Licensed SRO: Randy Cyker Date: 3-8-93

Licensed SRO: [illegible] Date: 3-8-93

Effective Date: 3-8-93 TPCN Number: 93-47

Expiration Date: 6-8-93

Shift Supervisor: [illegible] Date: 3-8-93

Responsible Manager: M Sweeney Date: 3/8/93

Plant Manager (or designee): [illegible] Date: 3/8/93

[x] TPCN Logged Procedure Clerk: [x] TPCN Filed

ATT B

PROCEDURE NUMBER	REVISION NUMBER	PAGE

36C

PROCEDURE CHANGE NOTICE	ATTACHMENT 1

1. INITIATION (Originator to complete Sections 1, 5, 6, 7, and 8)

Procedure Number: 7.4.4 New Revision Number: 20 Page: 1 of 13 (LAS 3-9-93)

Title: Reactor Pressure Vessel Head Removal

Is this a "NO CHANGE" to document biennial or annual review? ☐ YES; ☒ NO

Required Prior To: ☐ Startup; ☐ Shutdown; ☐ N/A; ☒ Other: 3-9-93

Procedures Requiring Concurrent Approval: None

Reference Document: TPCN 93-047

Originator (print): J. R. Flaherty Date: 3-9-93

2. REVIEWS

Originator's Supervisor: N/A Date:

Is Procedure 2.0.1.1 evaluation required? ☐ YES; ☑ NO

Is procedure walkdown required? ☐ YES; ☑ NO

Responsible Supervisor: M Fyoung Date: 3/9/93

Is approved PCN to be routed to Licensed Operators? ☐ YES; ☑ NO

Technical Review		Init	Date	Init	Date
X	SRG	JTS	3-9-93		
X	OPS*	RB	3-9-93		
X	RAD	[illegible]	3-9-93		
X	MNT*	[illegible]	3-9-93		
	TS	[illegible]	3/9/93		

Technica' Review		Init	Date	Init	Date
X	ENG	[illegible]	3/9/93		
X	SMSS*	[illegible]	3/9/93		
X	QA	[illegible]	3-9-93		
X	SMO	[illegible]	3/9/93		

* Optional for select procedures.

3. TYPING/PROOFREADING

Change Bars Required: ☒ YES; ☐ NO

Typist: [illegible] Initials/Date: [illegible] / 3/9/93

Proofreader: LONNIE SWANSON Initials/Date: LRS / 3-9-93

Responsible Supervisor: M F Young Initials/Date: [illegible] / 3-9-93

4. APPROVAL

SORC Chairman: [illegible] Date: 3/9/93

5. 10CFR50.59 APPLICABILITY REVIEW - TECHNICAL SPECIFICATIONS

Does PCN involve a change to Tech Specs? ☒ YES; ☐ NO

If YES, submit LCR per Procedure 0.29, as necessary, and record License Amendment Number prior to SORC approval: 147 & 150

ATT C

Procedure Number: 7.4.4 New Revision Number: 20 Page: 2

6. 10CFR50.59 APPLICABILITY REVIEW - USAR (required for changes not addressed by a Tech Spec Change; not required if all changes covered by a 10CFR50.92 Evaluation)

Does proposal change procedures from description in USAR? ☐ UNCERTAIN; ☑ NO

Does proposal involve a test or experiment not described in USAR? ☐ UNCERTAIN; ☑ NO

Could proposal affect nuclear safety in way not previously evaluated in USAR? ☐ UNCERTAIN; ☑ NO

If any question UNCERTAIN, forward to Engineering for 10CFR50.59 Reportability Review per Attachment 2.

7. EMERGENCY PLAN REVIEW

Is change in Emergency Plan or EPIPs involved? ☐ YES; ☒ NO

If YES, forward to Emergency Planning for 10CFR50.54(q) Evaluation per Attachment 3.

8. DESCRIPTION/JUSTIFICATION (explain in detail and attach new procedure or revision; continue on next page if necessary)

1. Added new Attachment 4 for Sign-Off and Review Sheet.
2. Added new Step 3.1.2 for Technical Specification 3/4.21.C.3.
3. Added new Step 6.1.2 for Technical Specification table 4.21.C.1 (Note 9).
4. Changed Step 6.2.7 so the requirement for loads moved over irradiated fuel is 3/9/93 be in accordance with NUREG 0612 instead of GE PRC 88-11. *
5. Minor editorial changes through the procedure.
6. Secondary containment requirements in Section 6 and 7 have been deleted because Tech Spec changes 147 & 150 removed the requirements to demonstrate Secondary Containment capability prior to the time the primary 3/9/93 Containment is opened for refueling. See IR 88-07 response.

* Per Record of Telecon between Tom Black and Jim Klapproth & Eleanore Schaeffl dtd 3/9/93, Subject PRC 88-11, this PRC was only addressing concerns with loads ≤750 lbs, specifically, dropping a Control Blade on irradiated fuel. Heavier loads are addressed in our response to NUREG 0612. 3/9/93

NUREG 0612 analyses of heavy loads ≥ 1000 lbs were analyzed per NPPD ltrs: LQA8300177 dtd July 25, 1983, L.C. Kuemel to D. Vassallo, Subject - Control of Heavy Loads - Phase I and Ltr dtd December 3, 1982, J. Pilant to D. Eisenhut, Subject - Control of Heavy Loads - Special Lifting Device Analyses.

Procedure Number: 7.4.4 New Revision Number: 20 Page: 3

8. DESCRIPTION/JUSTIFICATION (continued)

Other loads are evaluated IAW Procedure 0.26 as previously identified in step 6.2.9 of this procedure. NUREG-0612 analyses specifically addressed removal of the RPV head & its lifting gear.
7. Requirements of TPCN 93-047 have been included in this revision.

NEBRASKA PUBLIC POWER DISTRICT

36D

CNSS930083

ace March 11, 1993

To SORC Members

From R. L. Gardner

FOR INTER-DISTRICT BUSINESS ONLY

Subject SORC Meeting S93-026, March 9, 1993

Attendees:
R. L. Gardner, SORC Chairman
*C. M. Estes, Acting Senior Manager of Operations
*E. M. Mace, Senior Manager of Site Support
*R. Brungardt, Operations Manager
*M. F. Young, Acting Maintenance Manager,
*J. V. Sayer, Radiological Manager
*J. R. Flaherty, Engineering Manager
*C. R. Moeller, Technical Staff Manager
*P. L. Ballinger, Operations Engineering Supervisor
*H. A. Jantzen, Instrument And Control Supervisor
G. E. Smith, Quality Assurance Manager

*Denotes voting SORC Member

SORC convened at 1515 hours on March 9, 1993, for in-committee review and approval of the items listed below.

1. CNS Operations Manual Procedure 7.4.4, Rev. 20, Reactor Pressure Vessel Head Removal, was reviewed and approved.

2. An extension was granted to March 12, 1993, for the Operability Evaluation requested in response to SORC Meeting S93-021 for Operability Determination No. 93-018.

SORC was suspended and reconvened at 1700 hours to review and approve the following additional procedures. All previous attendees were present with the exception of E. M. Mace.

3. CNS Operations Manual Procedures

7.4.5, Rev. 18, Reactor Vessel Steam Dryer Removal

7.4.6, Rev. 19, Reactor Vessel Steam Separator And fuel Pool Gate Removal

7.4.27, Rev. 10, Main Steam Line Plugs Installation

Att D

7.4.28, Rev. 11, Bellows Shield Installation

After an extensive documentation review, the CNS Procedures listed above were reviewed and approved.

R. L. Gardner
SORC Chairman

/sg

cc: H. G. Parris
G. R. Horn
J. M. Meacham
D. A. Whitman
R. E. Wilbur
V. L. Wolstenholm
CNS Quality Assurance
CNS Training
NRC Resident Inspector

SORC	INIT	DATE	COP
PLT MGR		3-11-93	
SR MGR/OPS		3-12	
TS MGR		3/13	
SR MGR/SS		3-14	
OPS MGR		3-13	
RAD MGR		3-14	
MAINT MGR		3/16	
ENG MGR		3/23	
I&C SUPV		3-16	
OPS ENG SUPV		3-16	
QA MGR		3-16	

36H

GE Nuclear Energy

11422 Miracle Hills Dr., Suite 304, Omaha, NE 68154

G-HPO-8-322

October 17, 1988

Nebraska Public Power District
Columbus General Office
L. G. Kuncl/w. att.
G. A. Trevors/w. att.
R. E. Wilbur/w. att.
V. L. Wolstenholm/w. att.

Mr. G. R. Horn
Nuclear Operations Division Manager
Nebraska Public Power District
Cooper Nuclear Station
P. O. Box 98
Brownville, Nebraska 68321

SUBJECT: PRC 88-11 MODE 4 TECHNICAL SPECIFICATION SYSTEM INOPERABILITY

Dear Mr. Horn:

The following information (Attachment 1) is supplied as part of the GE Program for evaluation of Potentially Reportable Conditions in satisfaction of 10CFR Part 21. GE has concluded that this information is not a Reportable Condition within the scope of GE technical information. However, this conclusion is valid only if there are adequate controls at Cooper Nuclear Station.

Nebraska Public Power District should evaluate and confirm this conclusion as it relates to existing or future plant equipment, conditions, procedures or plans.

GE is notifying all BWR owners of the following information.

If GE can provide any assistance in resolving this issue please contact the undersigned.

Sincerely,

David J Brager

David J. Brager
Nuclear Services Manager
402/496-6919

Attachment

ATT 1

ATTACHMENT 1

INFORMATION TO BE EVALUATED

Background

During GE's Technical Specifications (TS) review for the BWR Owners' Group TS Committee it was determined that

1. Secondary containment leakage integrity,
2. Operability of the Standby Gas Treatment System (SGTS), and
3. Operability of the Process Radiation Monitoring System

are typically not required during Cold Shutdown (Operational Condition 4) or during refueling (Condition 5) when irradiated fuel is not being moved. Thus, the TS would not restrict movement of loads over the core or fuel storage pool during Operational Condition 4 nor would they restrict movement of non-irradiated loads during Operational Condition 5. Such loads, if dropped, could result in an unanalyzed event.

Basis

If containment integrity does not exist and the SGTS is not operable GE's assessment has indicated that dropping an object which possesses the same (and potentially even less) kinetic energy as that evaluated for the Fuel Handling Accident onto irradiated fuel could result in calculated radiological consequences in excess of those reported in the Safety Analysis Report (SAR).

The NRC has evaluated a similar concern in NUREG-0612 (Control of Heavy Loads at Nuclear Power Plants) and arrived at specific recommendations relative to plant TS and plant hardware and procedure modifications.

Conclusions

It is GE's conclusion that this condition does not represent a substantial safety hazard if adequate procedural or TS controls exist to prevent or mitigate the consequences of such an event.

Because the spent fuel storage configuration, crane capacity, safety precautions, safety features, administrative controls and procedures concerning activities around the spent fuel storage pool and the reactor vessel are plant specific, it is GE's conclusion that each utility should evaluate its plant specific configuration to determine the applicability of this event to the plant.

Corrective Actions

The event should be evaluated under 10CFR Part 21 on a plant specific basis for each BWR. GE is also informing the BWR Owners' Group of these conclusions. Official notification of the NRC is not planned at this time. Attachment 2 contains potential solutions for resolution of this concern if existing plant protection measures are determined to be insufficient.

ATTACHMENT 2

Recommendations

1. To determine if this event applies to a specific plant:

   a. Review existing plant Technical Specifications (TS) and plant procedures to ensure adequate controls exist.

   OR

   b. Determine if mechanical or electrical stops or interlocks are in place to prevent crane movement over irradiated fuel in the event secondary containment integrity does not exist or SGTS is not operable.

2. If the event applies to the plant, evaluate the event in the context of 10CFR Part 21. The following potential corrective actions to prevent occurrence of the event may be acceptable for resolution of this concern:

   a. Revise the plant TS or plant procedures to:

      (1) Prevent movement of loads heavier than a defined value over irradiated fuel whenever secondary containment integrity does not exist or the SGTS is inoperable. An analysis of plant unique loads could establish the defined load value.

      OR

      (2) Require containment integrity, radiation monitoring and SGTS operability whenever loads above the defined value are moved over irradiated fuel.

      OR

   b. Install mechanical or electrical interlocks or stops on load handling equipment to prevent movement of loads heavier than the defined value over irradiated fuel whenever secondary containment integrity does not exist, SGTS is not operable and radiation monitoring capability is not available.

36I

07086.1949

NEBRASKA PUBLIC POWER DISTRICT

CNSS888353

Date December 7, 1988

To P. L. Ballinger

From R. W. Foust

FOR INTER-DISTRICT BUSINESS ONLY

Subject Response to GE PRC 88-11

In PRC 88-11, GE addresses the concern that Technical Specifications of many BWR's do not prohibit moving loads (other than refueling and spent fuel shipping activities) over irradiated fuel with secondary containment not intact or SGTS not operable. During these conditions, radioactive releases resulting from fuel damage would not be mitigated as analyzed for the applicable design basis accident (Refueling Accident). If a load of sufficient weight (possibly less than a fuel bundle) were to be dropped onto irradiated fuel under the above conditions, radioactive releases could potentially exceed those analyzed in the USAR. GE has not determined the required size of this load.

GE Recommendation 1a.

To determine if this event applies to a specific plant: Review existing plant Technical Specifications (TS) and plant procedures to ensure adequate controls exist.

Evaluation

Technical Specifications and station procedures require secondary containment integrity and SGTS operability during reactor operation and during handling of irradiated fuel (T.S. 3.7.C.1). Additionally, Technical Specifications and station procedures require the reactor building crane to be in the RESTRICTED MODE during fuel cask handling (T.S. 3.10.H).

As suggested by GE, CNS Technical Specifications do not address secondary containment requirements for moving loads over irradiated fuel unless associated with refueling or spent fuel shipping. Station procedures generally include precautions regarding movement of objects over irradiated fuel. However, with the exception of refueling and spent fuel shipping activities, station procedures do not prohibit moving loads over irradiated fuel (vessel or fuel pool), when secondary containment is not intact or SGTS is inoperable.

The NPPD response to NUREG 0612, Control of Heavy Loads at Nuclear Power Plants, was reviewed. The NUREG and NPPD's response to the NUREG did not address the concern identified by this PRC.

GE Recommendation 1b.

"OR" to determine if this event applies to a specific plant: Determine if mechanical or electrical stops or interlocks are in place to prevent crane movement over irradiated fuel in the event secondary containment integrity does not exist or SGTS is not operable.

PRT I

Evaluation

Electrical interlocks are available to restrict the Reactor Building Crane from moving loads over irradiated fuel. However, existing procedures do not require the interlocks to be active during the described conditions. Procedure 7.6.1, Reactor Building Crane and Miscellaneous Hoists Operation", specifically states: "The switch will be left in the NORMAL position unless the RESTRICTED MODE is required for fuel cask handling". Additionally, other cranes which do not have interlocks are available for moving loads over irradiated fuel.

GE Recommendation 2.

If the event applies to the plant, evaluate the event in the context of 10CFR Part 21. The following potential corrective actions to prevent occurrence of the event may be acceptable for resolution of this concern: (Three possible resolutions are then offered).

Evaluation

A review of CNS Technical Specifications, USAR and procedurer suggests that the concern is applicable to CNS. However, during a typical fuel cycle the concern only applies to a limited period of time. Secondary containment integrity and SGTS operability are required by Technical Specifications during plant operation and during refueling activities. Therefore only approximately 2 weeks would remain when this event could be applicable during a cycle not requiring an extended or non-refueling outage. Since the event does not apply during operation, it is not an immediate safety concern.

A final determination regarding whether this issue is reportable may require a detailed analysis of the consequences of a load being dropped onto irradiated fuel. A simple calculation performed using the assumptions described in the CNS USAR for the "Refueling Accident" found that a 7 lb. object dropped onto irradiated fuel when the SGTS is inoperable could potentially result in radioactive releases exceeding those previously analyzed for the "Refueling Accident". However, because the USAR assumptions are extremely conservative and are not necessarily applicable to relatively small dropped objects or fuel stored in the fuel pool, the results of the simple calculation are unrealistic. A more sophisticated analysis using realistic assumptions is required.

It is not clear that 10CFR21 is the appropriate regulation for evaluating this issue. It may be appropriate for Licensing to work with GE to resolve any reportability concerns. Discussion with the responsible individual at GE indicates that this issue is generic to most BWR's. Therefore, the BWROG could be enlisted to assist in the analysis.

Implementing any of the GE recommended options would require prior definition of the maximum load which can be safely moved over irradiated fuel under the described conditions. A calculation to determine this maximum load has not been performed, but it is expected that the value will be in the range of 300 pounds.

Because the maximum acceptable load is not known, station procedures should be revised to prohibit movement of any objects over irradiated fuel during the described conditions. These revisions have been discussed with the Maintenance and Operations Supervisors and are not expected to cause any significant inconvenience. It is suggested that to ensure all applicable procedures are revised, Operations, Maintenance and Engineering Departments revise applicable procedures within their responsibility. The following procedure revisions are suggested:

1. Revise Abnormal Procedure 2.4.3.1, "Loss of Primary or Secondary Containment Integrity", to instruct the Control Room Operators to make an announcement whenever secondary containment integrity or SGTS operability is inadvertently lost to suspend movements of any loads over irradiated fuel. Note: Revision of this procedure will not prevent movement of loads over irradiated fuel during planned outages of secondary containment integrity or SGTS inoperability.

2. Revise Maintenance Procedure 7.6.1, "Reactor Building Crane and Miscellaneous Hoists Operation", to require verification of secondary containment integrity and SGTS operability prior to crane or hoist operation involving movement of any loads over irradiated fuel.

3. Install placards on all devices capable of moving loads over irradiated fuel. The placards would provide instructions such as: "Prior to moving objects over irradiated fuel, contact the Control Room to verify secondary containment integrity and SGTS operability. Refer to Maintenance Procedure 7.6.1". Note: This action, together with revision of 7.6.1, would ensure that no loads are moved over irradiated fuel during planned outages of secondary containment integrity or SGTS operability.

4. Revise applicable 10.xx and 7.4.xx series procedures to require Control Room verification of secondary containment integrity prior to movement of loads over irradiated fuel. Some procedures already have such prerequisites. Others do not.

R. W. Foust 12-7-88

R. W. Foust
Assistant Operations
Engineering Supervisor

Approved By _____ Date 12/9/88
Operations Engineering Supervisor

ATTACHMENT 1 PAGE 1 OF 3	PROCEDURE CHANGE NOTICE

Date: 9/7/90 Page 1 of 3

Procedure Number: 7.4.4 New Revision Number: 19

Title: Reactor Pressure Vessel Head Removal

Procedures Requiring Concurrent Approval: None

Required Prior To: ☐ Startup ☒ Shutdown ☐ N/A ☐ Other: _____

A. PCN BASIS (Note: Provide Description Of Change In Section H.)

☐ NRC Concern ☐ Non-Conformance Report ☐ Design Change ☐ QA Audit

☐ CNS Experience ☒ Industry Experience ☐ Administrative ☒ Other

Reference Document: GE PRC 88-11

B. PCN REVIEW

Originator: Brent A Moeller Date: 9/7/90

Originator's Supervisor: PEC Date: 9-10-90

Responsible Supervisor: W. E Cl Date: 9-10-90

	Technical Review	Init	Date	Init	Date
2	SRG	JB	12-26-90	LRS LRS	12/27/91 12/26/90
4	Ops Dept	KB	1-9-91	—	—
3	Eng Dept	RCC	1/9/91	M	1/24/91
1	Mnt Dept	MEH	9/11/90	MEH	2/5/91
5	Rad Dept	JB	1-10-91	Tbr	1/16/91

	Technical Review	Init	Date	Init	Date
6	PS Dept	[illegible]	1-17-91	—	—
8	[illegible] Dept	MEH	2/25/91	—	—
4.5	H/L Supv	[illegible]	2-15-91	—	—
	QC Coord	1-29-91	PEL	MA	2-13-91
7	QA Dept	KK	2-19-91	[illegible]	2-21-91

C. PCN IMPLEMENTATION

Procedure Typed By: [illegible] Date: 3/26/91

Responsible Manager: [illegible] Date: 5/10/91

Route Approved Procedure To Licensed Operators: ☐ Yes

D. SORC APPROVAL

SORC Chairman: [illegible] Date: 7/18/91

Note: Route Completed Form And Draft To Administrative Services Section For Microfilming And Final Disposition.

E

ATT 5

ATTACHMENT 1 PAGE 2 OF 3	PROCEDURE CHANGE NOTICE

Date: 9/7/90

Procedure Number: 7.4.4 New Revision Number: 19

E. 10CFR50.59 APPLICABILITY REVIEW: TECHNICAL SPECIFICATIONS

1. Is A Technical Specifications Change Required As A Result Of This PCN? ☐ Yes ☒ No
   If "Yes", Forward A Copy Of The PCN To Licensing For A 10CFR50.92 Evaluation And License Amendment Submittal Per 10CFR50.90.
   After Approval, Record License Amendment Number: _____
2. Is This PCN The Result Of A Technical Specifications Change? ☐ Yes ☒ No
   If "Yes", Record License Amendment Number: _____

Complete Section F. Only For Changes Not Associated With The Technical Specifications Change. If All Changes Are Covered By The 10CFR50.92 Evaluation, Do Not Complete Section F.

F. 10CFR50.59 APPLICABILITY REVIEW: USAR

1. Does The Proposal Change Procedures From Their Description In The USAR? ☐ Uncertain ☒ No
2. Does The Proposal Involve A Test Or Experiment Not Described In The USAR? ☐ Uncertain ☒ No
3. Could The Proposal Affect Nuclear Safety In A Way Not Previously Evaluated In The USAR? ☐ Uncertain ☒ No

If Any Of The Above Are Marked "Uncertain", Forward The PCN To Engineering For A 10CFR50.59 Reportability Review Per Attachment 2.

G. EMERGENCY PLAN REVIEW

1. Is A Change In The Emergency Plan Or EPIPs Involved? ☐ Yes ☒ No

If "Yes", Forward The PCN To Emergency Planning For A 10CFR50.54(q) Evaluation Per Attachment 3.

H. PCN DESCRIPTION AND JUSTIFICATION

Explain In Detail And Attach New Procedure Or Revision (Continue Explanation On Addendum, If Necessary):

ADDED STEP 7.8 (4 CRM 9/6/91) TO SECTION 7.0 TO CONTACT (LP 9/5/91) THE SHIFT SUPERVISOR TO VERIFY SECONDARY CONTAINMENT IS ESTABLISHED AND GET PERMISSION TO REMOVE THE VESSEL HEAD. - ADDED G.E. PRC 88-11 MODE 4, TECHNICAL SPECIFICATIONS 3.4 SYSTEM INOPERABILITY TO SECTION 3.C. ADDED NEW STEP 6.2.7 TO STATE SECONDARY CONTAINMENT SHALL BE ESTABLISHED PRIOR TO MOVING LOADS OVER IRRADIATED FUEL [IN RESPONSE TO REFERENCE 3.7.2]

PROCEDURE CHANGE NOTICE

Date: 4/7/90

Procedure Number: 7.4.4 New Revision Number: 19

Reason For Change (Continuation): ADDED NEW STEP 3.3 FOR CODES AND STANDARDS AND ADDED NUREG 0612 UNDER THIS STEP. ADDED TITLES TO DRAWINGS LISTED UNDER STEP 3.4. ADDED NEW STEPS 6.2.6 AND 6.2.8 TO COVER THE QUALIFICATIONS OF THE PROCEDURE PERFORMER - CHANGED "LEAD MECHANIC" TO MAINTENANCE REFUELING FLOOR SUPERVISOR" THROUGHOUT THE PROCEDURE.
DELETED STEP 8.1.9 - WAS MOVED AS A PART OF STEP 7.5
STEP 8.1.40 - ADDED WORDS "UNDER THE VESSEL HEAD"
~~STEP 5.2 - DELETED PART OF STEP ADDRESSING HOW TO WEAR TLDS AND DO SMEARS.~~
~~STEP 8.1.8 - DELETED STEP. DISCUSSED WITH FIM CHARD AND AGREED THIS STEP IS COVERED IN THE S.W.P FOR REACTOR VESSEL ACTIVITIES, JAN 4-2-91~~
ADDED NEW STEP 2.2 TO DISCUSS SECONDARY CONTAINMENT REQUIREMENTS AND THE LOAD AUTHORIZED TO BE MOVED BY THIS PROCEDURE.
ADDED NEW STEP 6.2.9 TO COVER THE REQUIREMENT OF LOADS NOT COVERED BY THIS PROCEDURE, LES 7/5/91

CRW 7/18/91

387 (4-85) REV.

36L

TELEPHONE CALL RECORD

INFORMATION ONLY

To: Jim Klapproth

Fr: Eleanor Schaak Date 3/9/93 Time:

Office GE - San Jose Customer

Phone Ext 5434 / Ext Ref. No.

Subject PRC 88-11

Talked to Jim + Eleanor about the intent of GE PRC 88-11. It was to address concerns with loads < 750 lbs, specifically dropping a control blade on irradiated fuel. They said ~~they~~ heavier loads are addressed in our response to NUREG-0612, and they have no concern for those if adequately addressed by our 0612 response

Action required: (Yes) (No)

Copies to: Jim Flaherty
Records

Signed Tom Black

ATTL