ENCLOSURE 1

U.S. NUCLEAR REGULATORY COMMISSION
REGION IV

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Facility:	Washington Nuclear Project-2
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Inspectors:	S. A. Boynton, Senior Resident Inspector G. D. Replogle, Resident Inspector G. W. Johnston, Senior Project Engineer M. H. Miller, Senior Resident Inspector (Cooper Nuclear Station)
Approved By:	H. J. Wong, Chief, Reactor Projects Branch E

ATTACHMENTS:

Attachment 1: Supplemental Information

Attachment 2: WNP-2 FSAR Upgrade Project Program Plan

EXECUTIVE SUMMARY

Washington Nuclear Project-2
NRC Inspection Report 50-397/97-14

Operations

- Operators were properly focused on the plant startup and demonstrated clear communications and good procedure usage. The control room supervisor provided good oversight to the crew (Section O1.2).

- Over the past several months equipment operators have not been meeting management expectations for identifying and correcting equipment and housekeeping deficiencies in the plant. Additionally, management has not been reinforcing these expectations through its own oversight process (Section O1.3).

- A violation was identified when an operating crew mispositioned a control rod during control rod manipulations for scram time testing. The operators and the shift technical advisor failed to implement adequate self-checking and independent verification. The operating crew also failed to recognize the event as a mispositioned control rod and, therefore, did not implement all of the requirements of the associated abnormal condition procedure (Section O8.1).

- The licensee's follow-through on corrective actions for a previous rod mispositioning event was weak in that a canceled corrective action could have reminded personnel of the need to enter an abnormal operating procedure. Additionally, the licensee's evaluation of the control rod mispositioning event lacked the scope and depth needed to identify and address poor log keeping and inconsistencies in procedures (Section O8.1).

Maintenance

- Although the licensee has demonstrated clear improvement in the implementation of their surveillance testing program, a violation was identified when an inservice test (IST) of Valve TIP-V-6 was not performed during the most recent refueling outage. A contributing factor to this and several previous violations of IST program requirements was untimely IST technical reviews that were performed after the components were returned to service (Section M1.2).

- A violation was identified in the licensee's misinterpretation of Technical Specifications (TS) and IST guidance. This resulted in an inappropriate action to reopen the containment penetration associated with TIP-V-6, an action not allowed by TS without proper administrative controls. Subsequent to the NRC's identification of the noncompliance, the licensee appropriately requested, and was granted, enforcement discretion which permitted the penetration to be opened (Section M1.2).

- Maintenance procedures associated with high-efficiency particulate air (HEPA) filter testing did not provide adequate controls to ensure that the Technical Support Center ventilation system was returned to its proper standby configuration (Section M1.3).

Engineering

- Engineering effectively resolved a long-standing problem with spiking source range monitors (SRMs) (Section O1.2).

- The licensee's operation of the ultimate heat sink spray pond spray rings has been inconsistent with the constraints described in the Final Safety Analysis Report (FSAR). A noncited violation was identified for failure to evaluate the impact of the deviation (Section E1.1).

Plant Support

- Adequate planning was provided for the troubleshooting and repair of a minor reactor coolant leak; however, the planning was not performed in accordance with as low as reasonably achievable (ALARA) procedures. The licensee missed an opportunity to identify this concern when corrective actions for a similar event in June 1997 were too narrowly focused. A violation of ALARA procedures was identified (Section R1.1).

- During the drywell closeout inspection, one Health Physics Technician demonstrated poor radiation work practices by removing the hood of his protective clothing and scratching his nose with a rubber-gloved hand while in the controlled surface contamination area (CSCA) (Section M1.4).

- Self-contained breathing apparatus (SCBA) air cylinders were not maintained in accordance with industry standards and several cylinders did not contain an appropriate supply of air. Corrective measures to address the deficiency were acceptable (Section F2).

Report Details

Summary of Plant Status

The plant was in Mode 2 at the beginning of the inspection period. The plant was being returned to power following the licensee's completion of Refueling Outage R12. The plant entered Mode 1 on July 7 and reached 100 percent power on July 20. On July 23, the licensee successfully completed a test of the plant's response to a trip of Reactor Feedwater Pump B to demonstrate proper response of the reactor recirculation and digital feedwater control systems. Reactor Feedwater Pump B was returned to service and the plant was returned to full power on July 25. Based upon system load demand, power was reduced to 90 percent on August 8 and was returned to 100 percent on August 10. The plant essentially remained at full power for the balance of the inspection period.

I. Operations

O1 Conduct of Operations

O1.1 General Comments (71707)

A review was conducted of the latest Institute for Nuclear Power Operations' evaluation at WNP-2. Based upon that review, no substantive findings regarding the licensee's performance were identified that had not already been identified by the NRC staff.

O1.2 Startup Observations

The inspectors observed the plant start up to critical conditions on July 4, 1997. Operators were well focused on the startup and demonstrated clear communications and good procedure usage. The control room supervisor (CRS) provided good oversight to the crew and actively participated in the entire evolution.

The inspectors also observed a marked improvement in the performance of the source range monitors (SRMs). During previous startups, electrical noise resulted in frequent SRM fast period alarms. These alarms were a significant distraction to the operators, especially when approaching criticality. During this startup, the inspectors observed no fast period alarms during the approach to criticality. Spiking SRMs have been a long-standing nuisance at WNP-2. Engineering had been effective at resolving this problem at WNP-2.

O1.3 Expectations for Equipment Operators and Staff for Plant Tours

a. Inspection Scope (71707)

During the inspection period, the inspectors conducted routine plant tours to evaluate: (1) proper system lineups/plant configuration, (2) housekeeping and cleanliness, (3) adequate radiological postings, and (4) plant material condition.

b. Observations and Findings

In general, plant housekeeping and equipment conditions were good and system line-ups were appropriate for plant operating conditions. However, a number of minor deficiencies were noted, but had not been documented. This indicated weaknesses in the conduct of plant tours by the operations department.

1. The emergency filtration train for the Technical Support Center (TSC) was found in operation due to unclear procedures which should have directed the emergency filtration system to be placed in a standby mode (See Section M1.3).

2. The flexible exhaust hose for one of the air starting motors associated with Emergency Diesel Generator 1B1 was found unsecured outside of the flywheel cowling, contrary to vendor recommendations.

3. A large puddle of water (approximately 12 square feet) was found in the reactor core isolation cooling (RCIC) pump room, apparently from overflow of a drip tray.

4. A telephone wire was found draped across the RCIC pump and turbine. Additionally, a demineralized water bottle and grease fitting were left on the pump skid.

5. An unsecured tool box was found in the residual heat removal (RHR) Pump Room A mezzanine. Additionally, a plant telephone was placed upon the motor operator for Valve RHR-V-64.

6. Several mechanics' tools and a radio were found in the mezzanine of the high pressure core spray pump room. The equipment was left behind from work that had been completed several weeks earlier.

7. An operations gangbox was found next to one of the redundant control room intake rad monitors, a safety-related component. This was contrary to the posted requirements on the box which directed that the box be stored at least 4 feet from safety-related equipment.

8. A number of failed indicating lights were identified on the motor control centers for the Division 1 and 2 emergency diesel generators.

Several of the discrepancies were noted to remain in existence over a number of operating shifts.

Operations Instruction (OI) 18, Revision A, "Equipment Operator Rounds," provides the licensee's expectations for proper operator tours. OI-18 outlines the specific items for operators to be cognizant of during their tours including: (1) plant

cleanliness, (2) equipment operation checks (for both idle and operating equipment), (3) equipment stowage, (4) oil and water leakage, and (5) checks of local control panels, electrical switchgear, and sumps. The inspectors noted that each of the observations above fell within the scope of the checks expected to be performed under OI-18.

OI-9, Revision J, "Expectations for Supervisory and Peer Oversight," provides instructions to all operations personnel for spending time in the plant observing, coaching, and providing oversight of operator performance. Observations performed by supervisors and peers are documented on attachments to OI-9, depending upon the area observed. Expectations are for supervisors and managers to perform three observations per week while crew staff members perform one observation per week. This would equate to over 400 "OI-9" observations each month, potentially covering 24 different aspects of operations. Equipment operator rounds is one of the 24 areas observed under the guidelines of OI-9. Over the last 3 months (May - July), there were 387 "OI-9" observations documented, well below management expectations. Of those, only three observations documented equipment operator rounds, all of which were performed in July. There were no observations in this area for four of the six operating crews.

The inspectors also noted that OI-5, Revision D, "Operations Department Exempt Personnel Plant Tours," provides expectations for each exempt staff member to perform a plant tour twice each month. Although the guidance in OI-5 is limited with regard to what items are to be observed, the principal focus is on material condition and housekeeping. Observations are recorded on Attachment 5.1 to OI-5, "Plant Tour Report," and forwarded to the Operations Administrative Specialist. Based on the number of nonsupervisory staff, at least 14 tours would be documented each month. Upon review of the plant tour reports file, it was noted that only six tours were documented over the last 6 months. Of the six tours documented, there were no substantive comments on material and housekeeping conditions.

c. Conclusions

Over the past several months equipment operators have not been meeting management expectations for identifying and correcting equipment and housekeeping deficiencies in the plant. Additionally, management has not been reinforcing these expectations through its own oversight process.

O2 Operational Status of Facilities and Equipment

O2.1 Engineered Safety Feature System Walkdowns (71707)

The inspectors walked down accessible portions of the following engineered safety feature systems:

- Diesel Generators 1, 2 and 3
- RHR system, Trains A, B and C
- Standby gas treatment system, Trains A and B
- Standby liquid control system
- Low pressure core spray system
- Control rod drive system - hydraulic control units

The systems were found to be properly aligned for the plant conditions, with few material condition deficiencies. Exceptions are noted in Section O1.3.

O8 Miscellaneous Operations Issues

O8.1 Improper Control Rod Manipulation

a. Inspection Scope (92901)

The inspectors reviewed the circumstances surrounding the mispositioning of a control rod during scram time testing on July 11, 1997. This review included the procedures and expectations for reactivity management and scram time testing and the scope and content of the licensee's corrective actions.

b. Observations and Findings

On July 11, during the initial portions of TS required scram time testing, in accordance with Plant Procedure Manual (PPM) TSP-CRD-C101, Revision 0, "CRD Scram Timing With Autoscramtimer System," operators withdrew a control rod out of sequence from the approved rod pull sheet. Prior to withdrawing the subsequent rod, operators recognized the error and halted control rod manipulations. The CRS and the station nuclear engineer (SNE) discussed the event and determined there were no reactivity concerns. The SNE then revised the pull sheet and the rod was reinserted to its correct position. Problem Evaluation Request (PER) 297-0636 was initiated to document the event for resolution.

The licensee determined that the root cause of the event was a failure on the part of the operators to adequately check themselves against the requirements of the pull sheet to verify the correct rod was being withdrawn. A contributing factor was confusion in the wording of an attachment to the scram time testing procedure which directed the withdrawal of the selected rod rather than specifically directing the reactor operator (RO) to the pull sheet. In this event, the RO and the shift technical advisor (STA) read the words of the attachment following the scram of the first rod (the mispositioned rod) and prior to review of the pull sheet. Thus, the first rod was still selected and the RO and STA erroneously assumed that the first rod should be withdrawn back to its initial position. Although this was considered a contributing factor, the inspectors noted that Step 4.6.3.k of PPM 1.3.1, Revision 32, "WNP-2 Operating Policies, Program and Procedures," is clear in that the RO and second person shall verify the proper control rod movement from the

pull sheet. The failure of the operating crew to manipulate the control rod in accordance with PPM TSP-CRD-C101 is an example of a violation of TS 5.4.1.a (VIO 50-397/97014-01).

In addition to the licensee's findings, the inspectors identified several other deficiencies in the operating crew's response to this event. Abnormal Condition Procedure 4.1.1.7A, Revision 3, "Recovery From a Mispositioned Control Rod," provides instructions to operators for responding to events such as the one on July 11. However, the operating crew failed to recognize that the entry conditions for PPM 4.1.1.7A were satisfied when the incorrect control rod was withdrawn and, therefore, failed to take actions in accordance with the abnormal procedure. Specifically, a core monitoring software program was not run to determine whether any preconditioning overpower had occurred due to the mispositioning. Instead, the SNE and CRS determined qualitatively that there were no reactivity concerns based on the fact that the mispositioned rod had been fully withdrawn prior to the event. Additionally, although the CRS was informed, plant management was not informed prior to repositioning of the control rod as required by Step 7 of PPM 4.1.1.7A.

Plant management agreed that operators should have entered the abnormal procedure in response to the event. However, the safety consequences associated with the failure to run the core monitoring software program were not significant in this case because the control rod was mispositioned to a previously analyzed position.

The inspectors noted that a similar event occurred in November 1994 and was documented in PER 294-997. The circumstances and the root cause of the previous event were virtually identical to the one on July 11. During the licensee's review of the 1994 event, it was identified that the operating crew failed to recognize and implement the actions of PPM 4.1.1.7A. In response, several corrective actions were recommended to ensure that PPM 4.1.1.7A would be entered for events of this type. First, it was recommended that the details of the event be discussed with each of the operating crews, STAs, and SNEs. This action was completed in January 1995 and included specifics on the root causes and the need to enter PPM 4.1.1.7A. Second, it was recommended that a reference to PPM 4.1.1.7A be added to procedures that deal with control rod movement. However, this recommendation was never implemented based, in part, on operations management's belief that the knowledge of the existence of PPM 4.1.1.7A was and should be a skill-of-the-craft level of knowledge. NRC review of the 1994 event was documented in NRC Inspection Report 50-397/94-32. The NRC staff dispositioned the noncompliance with a noncited violation based upon the licensee's timely and thorough evaluation and planned corrective actions, including the revision of procedures to include a reference to PPM 4.1.1.7A.

The operating crew's failure to implement the requirements of PPM 4.1.1.7A during the July 11 event is another example of a violation of TS 5.4.1.a (VIO 50-397/97014-01).

Several additional procedural issues were also identified from the review of the July 11 event. First, the control room log for the date of July 11 provides no information on the timeline of the event. Specifically, no entries were made in the log to identify when the testing began, when the mispositioning occurred, or when the correct rod configuration was reestablished. Although the control room log entry did not meet the expectations of PPM 3.1.10, Revision 13, "Operating Data and Logs," the licensee's followup to the event did not identify this as a concern. Second, the definition of a mispositioned control rod due to mechanical problems is inconsistent between procedures. Specifically, PPM 4.1.1.7A includes the following as a criterion for a mispositioned control rod: "a control rod not in its intended position due to mechanical problems (low air pressure, blown fuses, etc)." This criterion is not included in the definition of a mispositioned control rod in PPM 1.3.59, Revision 2, "Reactivity Management." The inconsistency could lead to confusion on the part of the operators as to the actions required to address a control rod that is out of position due to mechanical problems. The licensee agreed that the procedures were inconsistent.

c. Conclusions

The operating crew failed to implement adequate self-checking and independent verification during control rod manipulations. The operating crew also failed to recognize the event as a mispositioned control rod and, consequently, the need to enter an abnormal operating procedure.

The licensee's follow-through on corrective actions for a previous event was weak in that a canceled corrective action could have reminded personnel of the need to use the abnormal procedure for a mispositioned control rod. Additionally, the licensee's evaluation of the control rod mispositioning event lacked the scope and depth needed to identify and address the poor log keeping and procedural inconsistency.

II. Maintenance

M1 Conduct of Maintenance

M1.1 General Comments

a. Inspection Scope (61726, 62707)

The inspectors observed or reviewed portions of the following maintenance and surveillance activities:

- ISP-MS-Q928, Revision 0, "Main Steam Line Hi Flow Channel D - CFT/CC

- ISP-MS-Q923, Revision 0, "ADS - Trip System A - Reactor Water Level Low, Level 3 - CFT/CC
- Packing Adjustment on Reactor Water Cleanup Valve (DK27 04 11) (Documentation Review)
- GKN8 01, TSC Emergency Ventilation Filter Replacement and Testing (Documentation Review)
- PPM 3.1.2, Final Drywell Closeout Inspection and 900 psig Operational Checks
- OSP-RSCS-C401, Rod Sequence Control System Operability Check
- OSP-TIP/IST-R701, TIP Valve Operability (Documentation Review)

Surveillances were generally performed in a thorough and professional manner. The applicable TS actions statements were identified and entered, as appropriate, for each activity. Issues associated with poor radiation worker practices are discussed in Section M1.4 below. Additionally, a missed surveillance is discussed in Section M1.2.

M1.2 Missed Surveillance on Traversing Incore Probe (TIP) Valve V-6

a. Inspection Scope (61726)

The licensee identified that IST in accordance with TS requirements was not performed for Valve TIP-V-6 prior to startup. The inspectors performed followup to this licensee-identified finding.

b. Observations and Findings

Licensee Actions: On July 17, 1997, the IST coordinator identified that a surveillance required by the IST program was not performed to verify proper closure of Valve TIP-V-6 prior to startup (operational Mode 2). Per the licensee's IST program, the valve was required to be tested every refueling outage. TIP-V-6 is a 3/8-inch check valve in the TIP purge line and is credited as an inboard containment isolation valve. The IST coordinator recognized that workers had mistakenly taken credit for a local leak rate test (LLRT), which was performed during the previous refueling outage (R11). Taking credit for an LLRT was allowed by procedure if the LLRT was performed during the same refueling outage (R12 in this case). The IST coordinator's review of the valve testing occurred after the plant restart from the refueling outage (July 4, 1997).

Upon discovery of the missed surveillance test, the licensee declared TIP-V-6 inoperable and closed Valve TIP-V-15, the outboard containment isolation valve.

This isolated the penetration in accordance with TS Limiting Condition for Operation (LCO) 3.6.1.3.A.1.

Since TIP-V-6 was located in the drywell (an inerted space), performance of the IST on the valve would have required a plant shutdown. Additionally, the licensee determined that failure to maintain a purge through the line could result in operational problems with the TIP units.

On July 18, 1997, in lieu of performing the IST surveillance, engineering completed a "Follow-up Assessment of Operability (FAO)" concerning TIP-V-6 and concluded that the valve was operable. Operations then reopened TIP-V-15 to reestablish purge flow to the TIP units The FAO was based, in part, on the good performance of the valve during previous surveillances. The licensee believed that this approach was consistent with guidance contained in Section 7.1 of NUREG 1482, "Guidelines for IST at Nuclear Power Plants," and Generic Letter (GL) 91-18, "Information to Licensees Regarding Two NRC Inspection Manual Sections on Resolution of Degraded and Nonconforming Conditions and on Operability."

NRC Evaluation:

Failure to Perform IST Prior to Startup: The licensee has experienced repeated instances where surveillances were not appropriately performed when required. Examples of previous problems include:

- On June 29, 1996, testing in accordance with IST procedures was not performed for two RCIC valves prior to changing operational modes (NRC Inspection Report 50-397/96-19). NOTE: Subsequent to the identification of this problem, the licensee was able to demonstrate that equivalent testing had been performed for these valves during maintenance.

- On May 24, 1996, the licensee identified that, during Refueling Outage R10, IST of 85 excess flow check valves was inappropriately deferred to the following refueling outage. The deferral was contrary to the requirements of the licensee's IST program, which specified that the IST be performed each refueling outage (NRC Inspection Report 50-397/96-08).

- In June 1996, TS surveillance requirements associated with the LCOs for turbine throttle valves, the rod block monitor, and the average power range monitors were not met prior to changing operational modes (NRC Inspection Report 50-397/96-19).

- On June 13-14, 1996, the daily TS recirculation loop flow mismatch surveillance was not performed (NRC Inspection Report 50-397/96-19).

- On June 21 and 23, 1996, the daily TS average power range monitors channel checks were not performed.

NOTE: Some of the above examples were the subject of an escalated enforcement action that, in part, addressed missed surveillances (NRC Inspection Report 50-397/96-19 and a letter to the licensee dated November 26, 1996).

In the case of TIP-V-6, and in the first two examples above, the IST Program coordinator had identified the missed surveillances after the components were returned to service.

The inspectors determined that the licensee's corrective actions to address previous surveillance implementation problems were not entirely effective, but had resulted in improved performance when compared to previous years. The failure to perform IST of TIP-V-6 during R12 was a violation of TS 5.5 (VIO 50-397/97014-02). This TS requires the licensee to properly implement the IST Program.

FAO: The inspectors reviewed the FAO which addressed the operability of TIP-V-6. Although the inspectors agreed that TIP-V-6 demonstrated a good operating history, declaring the valve operable prior to performance of the missed surveillance appeared to be in violation of the WNP-2 TS.

The inspectors contacted cognizant personnel in the Office of Nuclear Reactor Regulation to discuss the issue. From those discussions, the NRC staff determined that the licensee had misinterpreted the guidance provided in GL 91-18 and NUREG 1482. The licensee interpreted the guidance in NUREG 1482 to enable a determination of operability to substitute for a missed surveillance test. However, in reopening the containment penetration, the licensee's actions were inconsistent with TS SR 3.0.3 and TS LCO 3.6.1.3.A.1. TS SR 3.0.3 provides relief from entering a TS LCO, provided the missed surveillance is performed within a 24-hour period. Otherwise, the licensee is required to declare the LCO for the component not met (TIP-V-6 in this case) and the applicable condition(s) must be entered. With the LCO of TS 3.6.1.3.A.1 not met for a containment penetration, the penetration must be isolated in accordance with Required Action A.1 of TS 3.6.1.3 within 4 hours of discovery. On August 12, 1997, the NRC informed the licensee by phone call of the TS noncompliance.

In response to the NRC position, the licensee declared TIP-V-6 inoperable and isolated the penetration by closing TIP-V-15. The licensee subsequently requested enforcement discretion from TS 3.6.1.3.A.1 in a letter to the NRC dated August 12, 1997. The NRC reviewed the request and verbally granted a Notice of Enforcement Discretion (NOED) on August 13, 1997, that provided a basis for not isolating the line. The NOED was formally approved in the August 15, 1997, letter to the licensee (NOED 97-6-012).

The actions taken by the licensee to unisolate the penetration associated with TIP-V-6 between July 18 and August 12, 1997, without the implementation of appropriate administrative controls, was identified as a violation of TS 3.6.1.3.A.1 (VIO 50-397/97014-03).

The inspectors also noted two previous instances where the licensee had failed to accomplish required actions due to inappropriate interpretations of NRC regulations, TS requirements, and guidance documents:

- An inappropriate interpretation of GL 87-09, "Sections 3.0 and 4.0 of the Standard TS on the Applicability of Limiting Conditions for Operations and Surveillance Requirements," resulted in the deferral of numerous TS surveillances until after plant startup. The TS surveillances were required to be completed prior to startup (NRC Inspection Report 50-397/96-19).

- An inappropriate interpretation of TS Bases resulted in the failure to report missed TS surveillances for blind flanges in accordance with 10 CFR 50.73 (NRC Inspection Report 50-397/97-09). The licensee submitted a licensee event report after the NRC brought the concern to their attention.

c. Conclusions

Although the licensee has demonstrated clear improvement in the implementation of their surveillance testing program, a violation was identified when an IST of Valve TIP-V-6 was not performed during the most recent refueling outage. A common factor to this and two previous violations of IST program requirements was IST program coordinator reviews that were performed after the components were returned to service.

The licensee's misinterpretation of plant TS and IST guidance resulted in an inappropriate action to reopen the containment penetration associated with TIP-V-6, an action not allowed by TS without proper administrative controls. Subsequent to the NRC's identification of the noncompliance, the licensee appropriately requested, and was granted, enforcement discretion which permitted the penetration to be opened until September 27, 1997; a TS amendment is issued; or an outage of sufficient duration to permit a surveillance test to be performed; whichever is sooner.

M1.3 Control and Testing of the TSC Emergency Ventilation Train

a. Inspection Scope (62707, 71707)

During a routine plant tour in the TSC on July 17, the inspectors identified that the TSC emergency ventilation filters were in service with no apparent ongoing maintenance activities or operational needs. The inspectors reviewed the most recent maintenance activities associated with the system to determine the cause of the operating condition.

b. Observations and Findings

Work Order (WO) GKN8 01 was performed between July 12 and 14 to replace and test the charcoal and HEPA filters of the TSC emergency ventilation train. Review of the WO documentation indicated that the train had been operating since testing of the filters was conducted on July 14. The testing of the filters was conducted in accordance with PPM 10.2.82, Revision 3, "HEPA Filter In-Place Testing," and PPM 10.2.83, Revision 3, "Charcoal Filter In-Place Testing." A review of these procedures found that PPM 10.2.83 provides direction to have operations secure the filter unit and place it in a standby lineup upon completion of the testing. However, PPM 10.2.82 does not provide similar direction when testing is complete. Because WO GKN8 01 provided for HEPA filter testing following the charcoal filter testing, no clear direction was provided to the maintenance personnel to have operations secure the ventilation unit as part of the closeout of the WO.

Two concerns were identified with the as-found condition of the TSC ventilation system. First, the condition went unrecognized by operations for 3 days before being identified by the inspectors (see Section O1.3). Second, the failure to ensure that the TSC emergency ventilation train is returned to and remains in a standby lineup potentially impacts the ability of the TSC ventilation system to provide a habitable environment consistent with that of the control room, as required by the FSAR. Specifically, long-term operation of the unit could lead to degradation in the efficiency of the charcoal and HEPA filters. This degradation could go undetected since, unlike the control room ventilation train, the licensee has no specific requirements to test the TSC filters at operating intervals.

c. Conclusions

Maintenance procedures associated with HEPA filter testing did not provide adequate controls to ensure that the TSC ventilation system was returned to its proper, standby configuration.

M1.4 Drywell Closeout Inspection

a. Inspection Scope (61726)

The inspectors observed the licensee's final drywell closeout inspection and 900 psig operational checks.

b. Observations and Findings

Background - The licensee performed the final drywell closeout inspection at approximately 4 percent power and 900 psig reactor pressure. Radiation levels were elevated in the drywell during low power operations. Primary points of interest during the surveillance included:

- position verification of all vacuum relief breakers
- checks for operational leakage
- drywell cleanliness verification

NRC Assessment: The inspection was performed in a thorough and effective manner. The preinspection briefing properly alerted operators to hazards in the drywell. Preplanning was evidenced by the rapid, yet thorough, manner in which operators completed each task required by the procedure. Proper ALARA techniques were demonstrated by operators. No foreign debris was identified during this inspection.

The inspectors observed poor radiation worker practices by one health physics technician (HPT). Specifically, while outside the drywell, but still in the CSCA, the HPT removed his anticontamination hood and then returned the hood back to his head on two occasions. Additionally, the HPT was observed scratching his nose with his potentially contaminated gloves.

c. Conclusions

Operators effectively performed the drywell closeout inspection. One HPT demonstrated poor radiation worker practices while in the CSCA.

III. Engineering

E1 Conduct of Engineering

E1.1 Operation of Standby Service Water (SW) System Inconsistent With FSAR

a. Inspection Scope (71707, 37551)

In conjunction with a routine walkdown of the SW system, the inspectors reviewed the design and operational requirements of the system as described in the FSAR and in PPM 2.4.5, Revision 33, "Standby SW System."

b. Observations and Findings

Overall, PPM 2.4.5 adequately addresses the design requirements of the SW system to ensure that process variable limits in the plant TS and accident analyses would not be exceeded. However, PPM 2.4.5 does not fully address all of the operational requirements of the system as described in the FSAR. Section 9.2.5.2 of the FSAR describes the operation of the SW system in relation to the ultimate heat sink spray ponds. For operation of the spray rings, Section 9.2.5.2 provides for bypassing the spray rings when pond temperature drops below 60°F. Upon increasing pond temperature, the spray ring is returned to service before pond temperature exceeds 70°F. The operational requirement to place the spray ring in service prior to temperature exceeding 70°F was not adequately translated to PPM 2.4.5. As a

result, the inspectors identified two recent occasions where pond temperature exceeded 70°F before operations placed the spray rings in service. It was noted, however, that pond temperature never exceeded the TS limit of 77°F.

The safety significance of the discrepancy appears to be low in that the accident analyses assume an initial spray pond temperature of 77°F, well above the FSAR operational constraint. However, the full ramifications of operating the SW system above 70°F without placing the spray rings in service had not been evaluated by the licensee.

In response to the inspectors' concerns, the licensee revised PPM 2.4.5 to provide direction to operators for placing the spray rings in service prior to pond temperature exceeding 70°F. Additionally, PER 297-0701 was initiated to resolve the discrepancy through the licensee's corrective action process.

The licensee has recently initiated actions to upgrade its FSAR, a program scheduled to be completed in early 1998. The scope, methodology, and schedule for completion of the program is provided as Attachment 2 to this report. Chapter 9 of the FSAR was under review as part of the upgrade program when the discrepancy was identified. Based upon the scope of the program, it is believed that the licensee would have likely identified the discrepancy through its own initiative. The failure to document a written safety evaluation for operation of the SW system outside of the constraints of the FSAR was identified as a violation of 10 CFR 50.59. This violation is being treated as a noncited violation in accordance with NRC Enforcement Guidance Memorandum 96-005 (NCV 50-397/97014-04).

c. Conclusions

The licensee has been operating the SW system within the system's design requirements. However, operation of the ultimate heat sink spray rings has not been consistent with the operational description set forth in the FSAR.

IV. Plant Support

R1 Radiological Protection and Chemistry Controls

R1.1 Improper Implementation of the ALARA Program

a. Inspection Scope (71750)

In conjunction with a review of the troubleshooting and repair activities associated with a minor reactor coolant leak in one of the reactor water cleanup (RWCU) pump rooms, the inspectors reviewed the licensee's ALARA planning for the entry into the pump room.

b. Observations and Findings

During operation, the RWCU pump rooms are posted as High-High radiation areas in accordance with the licensee's area posting requirements. These areas are designated as such based upon general area radiation levels exceeding 1000 mrem/hr.

PPM 11.2.2.5, Revision 6, "ALARA Job Planning and Reviews," outlines the licensee's responsibilities and requirements for ALARA prejob planning, reviews, evaluations, and prejob briefings to ensure that occupational radiation exposures are maintained ALARA. PPM 11.2.2.5 provides the criteria to be utilized to determine what level of review is appropriate for a job. The levels of review are described as Level I and Level II ALARA reviews. Level I and II reviews are approved as part of the radiation work permit (RWP) package during the RWP approval process. The ALARA reviews are performed electronically through the licensee's total exposure system (TES).

Based upon the high dose rates present in the RWCU pump rooms, PPM 11.2.2.5 required both Level I and Level II ALARA review for the RWP utilized in the troubleshooting and repair of the minor reactor coolant leak. The RWP utilized for the pump room entry was RWP 97000010, "Equipment Operation/Investigation - High & High-High Rad Areas." A review of TES records found that Level I and Level II ALARA reviews had not been performed for this RWP, contrary to the requirements of PPM 11.2.2.5. However, it was noted that the prejob planning for entry into the RWCU pump room provided for adequate controls to ensure that ALARA goals were met.

Although proper planning was performed for the entry into the RWCU pump room, the approved process by which adequate radiological controls are established was not followed. A similar occurrence in June 1997 was documented in PER 297-0507. This PER described the failure to document and approve a Level II ALARA review for work performed on the control rod drive system. Additional information provided in PER 297-0507 indicated that, again, substantial planning had been performed for the work, but not documented in TES in accordance with PPM 11.2.2.5. In response to PER 297-0507, the licensee determined the root cause to be lack of self-checking by the assigned ALARA planner. The ALARA planner and the supervisor approving the RWP were counseled on the need for self-checking. Although the assigned dispositioner of the PER recognized that there was the potential for recurrence of the event, no other corrective actions were documented until a quality assurance review of the PER noted that the generic impact of the event had not been adequately addressed. In response to quality assurance's concern, an additional action was taken to counsel all of the work planning supervisors on the "generic impact," as stated in the dispositioning package for PER 297-0507. No actions were taken to review additional RWPs for similar deficiencies. The inspectors considered the scope of corrective actions for PER

297-0507 to be narrow in addressing the potential generic implications of the identified concern and in exploring other potential underlying causes.

The failure to adhere to the approved process for establishing appropriate radiological controls for work activities has the potential to lead to further problems in the ALARA program and increases the risk of personnel contaminations and/or overexposures. The failure to follow the requirements of PPM 11.2.2.5 for the development and approval of RWP 97000010 was identified as a violation of TS 5.4.1.a (VIO 50-397/97014-05).

c. Conclusions

Although adequate planning was provided for the troubleshooting and repair of the minor reactor coolant leak, the planning was not performed in accordance with ALARA procedures. The licensee missed an opportunity to identify this concern when corrective actions for a similar event in June 1997 were too narrowly focused.

F2 Status of Fire Protection Facilities and Equipment

a. Inspection Scope (64704)

The inspectors reviewed design basis information and procedures associated with SCBA to evaluate maintenance on the units.

b. Observations and Findings

Background: Per the WNP-2 Fire Protection Evaluation (Appendix F of the FSAR), fire protection equipment will be maintained in accordance with industry standards. The licensee stated that the SCBAs were maintained in accordance with the recommendations contained in National Fire Protection Association (NFPA) 1404. This standard states, in part:

> "The air cylinders of all SCBA shall be maintained at not less than 90 percent of the rated pressure stamped on the cylinder."

Thirty-minute bottles are normally utilized in the SCBA and each bottle is rated at 4500 psig.

NRC Assessment: The inspectors identified that SCBA air cylinders were not maintained in accordance with the recommendations contained in NFPA 1404. Specifically, the minimum bottle pressure specified by NFPA 1404 is approximately 4000 psig, while the acceptance criteria used during monthly inspections was only 3500 psig. Furthermore, the licensee could not identify a basis for the lower acceptance criteria. An SCBA charged to 3500 psig would nominally provide 23 minutes of air to the user.

In response to the concern, the licensee, in part: (1) informed qualified SCBA users that the minimum acceptable pressure for SCBA air cylinders is 4000 psig, (2) initiated actions to revise the inspection acceptance criteria for SCBA air cylinders to 4000 psig, and (3) took steps to ensure that all air cylinders were charged to at least 4000 psig. During the licensee's inspection of the air cylinders, several in-service cylinders were found with air pressure less than 4000 psig. Those units were appropriately replaced. The inspectors considered the licensee's corrective measures to be acceptable.

c. Conclusions

The SCBA inspection procedure did not maintain industry standards for air cylinders. As a result, several in-service air cylinders did not contain an appropriate supply of air (at least 4000 psig). Corrective measures to address the deficiency were acceptable.

V. Management Meetings

X1 Exit Meeting Summary

The inspectors presented the inspection results to members of licensee management after the conclusion of the inspection on August 19, 1997. The licensee acknowledged the findings presented.

The inspectors asked the licensee whether any materials examined during the inspection should be considered proprietary. No proprietary information was identified.

ATTACHMENT 1

Supplemental Information

PARTIAL LIST OF PERSONS CONTACTED

Licensee

P. Bemis, Vice President for Nuclear Operations
J. Hunter, Acting Radiation Protection Manager
P. Inserra, Licensing Manager
A. Langdon, Assistant Operations Manager
T. Love, Plant Support Manager
M. Monopoli, Operations Manager
G. Smith, Plant General Manager
J. Swailes, Engineering Director
D. Swank, Regulatory Affairs Manager
R. Webring, Vice President Operations Support

INSPECTION PROCEDURES USED

IP 37551:	Onsite Engineering
IP 61726:	Surveillance Observations
IP 62707:	Maintenance Observations
IP 64704:	Fire Protection Program
IP 71707:	Plant Operations
IP 92901:	Followup - Operations
IP 92903:	Followup - Engineering

ITEMS OPENED AND CLOSED

Opened

50-397/9714-01	VIO	Failure to adhere to procedures during control rod scram time testing
50-397/9714-02	VIO	Failure to perform IST of Valve TIP-V-6
50-397/9714-03	VIO	Failure to maintain a containment penetration isolated with an inoperable containment isolation valve
50-397/9714-04	NCV	Operation of the ultimate heat sink spray rings inconsistent with the operational description set forth in the FSAR
50-397/9714-05	VIO	Failure to follow requirements for development and approval of radiation work permit

Closed

50-397/9714-04	NCV	Operation of the ultimate heat sink spray rings inconsistent with the operational description set forth in the FSAR

LIST OF ACRONYMS

ALARA	as low as reasonably achievable
CSCA	controlled surface contamination area
CRS	control room supervisor
FAO	follow-up assessment of operability
FSAR	Final Safety Analysis Report
GL	Generic Letter
HEPA	high-efficiency particulate air
HPT	health physics technician
IST	inservice testing
LCO	limiting condition for operation
LLRT	local leak rate testing
NCV	noncited violation
NFPA	National Fire Protection Association
NOED	Notice of Enforcement Discretion
NRC	U.S. Nuclear Regulatory Commission
OI	Operations Instruction
PER	problem evaluation request
PPM	Plant Procedures Manual
RCIC	reactor core isolation cooling
RHR	residual heat removal
RO	reactor operator
RWCU	reactor water cleanup
RWP	radiation work permit
SCBA	self-contained breathing apparatus
SNE	station nuclear engineer
SRM	source range monitor
STA	shift technical advisor
SW	service water
TES	total exposure system
TIP	traversing incore probe
TS	Technical Specifications
TSC	Technical Support Center
WNP-2	Washington Nuclear Project-2
WO	work order
VIO	violation

ATTACHMENT 2

WNP-2 FSAR UPGRADE PROJECT PROGRAM PLAN

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EXECUTIVE SUMMARY

The Supply System, has initiated efforts to review and upgrade the FSAR. This initiative was identified even before the NRC recognized industry problems with the accuracy of Safety Analysis Reports as identified in Information Notice 96-17. The Supply System originally identified the objectives and schedule for the FSAR Upgrade Project in the Performance Enhancement Strategy (PES). The schedule in the PES reflected a project completion and FSAR submittal to the NRC by 8/97. In addition to the PES initiative, the reasons for the FSAR Upgrade Project were provided during an NRC presentation on May 15, 1996 as follows:

- Plant Operations Committee (POC) assessment and rejection of safety evaluations
- FSAR identified inaccuracies
- Equipment part number errors and inconsistencies
- Redundant information
- Maintaining unnecessary historical information

The schedule presented to the NRC was for a completion of the review effort by August 1997 with an NRC submittal in the Spring of 1997. Such an upgrade effort could be very manpower intensive and costly without a proper planning effort to define the approach and criteria for conducting the review, and to limit the scope to the minimal effort required to provide a high confidence of an accurate and complete FSAR. Therefore, the Supply System prepared this project plan to provide guidelines and a management plan for completing the effort consistent with the project objectives.

The objectives of the FSAR Upgrade Project identified in the PES are to rewrite the FSAR to ensure that it:

- Contains the information required by Regulatory Guide 1.70.
- Accurately reflects design and operating procedures.
- Can be relied upon for 10CFR50.59 safety evaluations.

An upgraded FSAR will accurately reflect the existing WNP-2 design, reflect all information required by Regulatory Guide 1.70, and consolidate current redundant data. This upgrade process will also develop an FSAR change process by which the future integrity of the document will be protected, and approved changes will be readily accessible to the organization.

Additional definition of the FSAR Upgrade Project objectives were identified in the May 15, 1996, Supply System presentation to the NRC. Tasks to be completed as part of the FSAR Upgrade Project include:

- Remove material from the FSAR which was retained for "historical" reasons.
- Address the best methodology for inclusion and maintenance of FSAR figures.
- Assure consistent nomenclature throughout the FSAR and with present plant nomenclature. Replace vendor nomenclature with site specific nomenclature based on the Master Equipment List (MEL).
- Eliminate the separate Question and Responses sections of the FSAR and consolidate appropriate information into the main FSAR sections.
- Consolidate information from other appendices into the body of the FSAR, as appropriate.
- Correct technical inaccuracies.
- Remove non-essential information, consolidate redundant information into appropriate FSAR sections, and ensure compliance with Regulatory Guide 1.70, Revision 2.
- Define a more efficient and effective FSAR maintenance process with better control of FSAR contents through establishment of a master electronic version.

There are a number of benefits to be derived from a FSAR Upgrade Project including:

- Better understanding of the relationship between 10CFR50, the design and licensing basis, industry codes, WNP-2 programs and procedures.
- Improved operability assessments.
- Improved 10CFR50.59 safety evaluations.
- Important complement to the Engineering training program.

The basic approach used to develop this plan was to review the FSAR change process to evaluate the effectiveness of that process in maintaining the FSAR consistent with changes made to the plant design, operation or administrative commitments in accordance with 10CFR50.59. Recommendations on improvements to the process to support the FSAR upgrade process or to improve maintenance of the FSAR once it has been revised were identified. As part of the planning effort, past, current, and planned programs which could be utilized to provide the basis for review and upgrade of the FSAR were evaluated in order to find ways to limit the scope while still providing high confidence in the accuracy and completeness of the FSAR. Although limited, some programs were identified, such as the FSAR revision to support the power uprate. In addition, programs which were ongoing at WNP-2 and could impact the FSAR review were evaluated to assure the plan included the proper coordination and interface. These include programs such as the Improved Technical Specifications implementation and the commitment

reduction program. The results of these evaluations are discussed in detail in section 3.0 of the plan.

Key WNP-2 personnel throughout the organization were interviewed; past, current, or planned programs related to FSAR reviews were evaluated; and FSAR discrepancies which have already been identified were reviewed in order to quantify the level of review required in various FSAR sections. Based upon the interviews with key Supply System personnel, the source documents to establish the basis for the FSAR reviews were identified. After defining the overall scope of the upgrade effort, the guidelines for conducting the reviews, elimination of information in order to "rightsize" the FSAR, and disposition of discrepancies identified during the review were prepared. The overall process for conducting the upgrade reviews, the scope of the review, an initial schedule, and manpower estimates are incorporated into the Project Plan.

The initial schedule is based upon a project initiation in July 1996. Most of the initial tasks in the schedule are to organize the project before most of the technical personnel are added to the organization. This will maximize project team productivity and minimize the review effort required by the WNP-2 organization until after the Improved Technical Specifications implementation in October. The majority of the review and rewrite is scheduled for completion in August 1997, with final project completion and FSAR submittal by March 1998. The initial manpower projections by resource category are as follows:

Resource Category	Estimated Manhours
Project Manager	3494
Operations	1135
Technical/Engineering	7171
Administrative/Clerical	1948
Lead Technical Reviewers	2088
Organization Reviewers	1342

Following Supply System management review, the project plan and guidelines will be validated by conducting a pilot review of some FSAR sections.

1.0 INTRODUCTION

1.1 Background

As a result of recent problems identified at some nuclear plants, the NRC has initiated efforts to review utilities' compliance with the USAR. The NRC has found that some utilities have not maintained and updated their USARs consistent with changes made to the plant design, operation or administrative commitments in accordance with 10CFR50.59. Recent statements by NRC Commissioners and management have made it clear that they expect utilities to comply with their current licensing basis as described in the USAR. As a result of problems found at Millstone Unit 1, they issued Information Notice (IN) 96-17, "Reactor Operation Inconsistent with the Updated Final Safety Analysis Report". Essentially, the NRC found that certain activities at Millstone Unit 1 may have been conducted in violation of license requirements and that refueling activities may not have been conducted consistent with the Updated Final Safety Analysis Report (UFSAR). The fundamental causes for the Millstone Unit 1 UFSAR inaccuracies were identified as follows:

- The original UFSAR contained errors and omissions.

- The administrative control programs (e.g., Design Control, Corrective Action, Commitment Tracking) did not fully address regulatory requirements. Assuming the original UFSAR was accurate, the verbatim compliance with the previous and current administrative programs would not have maintained an accurate UFSAR. Corrective actions for events and internal assessments did not fully address the adequacy of administrative programs for meeting regulatory requirements.

- NU did not fully implement the administrative programs. NU did not see the UFSAR as a document that was required to be accurate.

- Internal correspondence and events involving the design basis (e.g., NOVs, LERs) from the original licensed UFSAR show a pattern of information communicated to NU management. This information consistently identified weaknesses and risks associated with the UFSAR and design bases. NU management made commitments on the docket to correct these deficiencies. The actions were ineffective, partially implemented, or not done.

- NU oversight did not identify this event pattern to management, its significance, or the effectiveness of corrective actions to prevent recurrence.

Other adverse conditions identified included the following:

- There is an organizational tendency to focus narrowly on the technical aspects of

issues and their technical resolution. This lack of a questioning attitude inhibits the identification of root causes, generic implications, and the corrective actions to prevent a class of recurrent issues.

- While there is strong emphasis on safety as a stated objective, the organization does not consistently recognize or emphasize the collective set of administrative (e.g., the proposed Determine Course of Action (DCA) concept) and technical processes (e.g., Setpoint Control) that demonstrate and assure that objective is met.

- There is a general lack of understanding and appreciation for the relationship between 10CFR50, design bases, licensing bases, industry codes, and NU's administrative programs.

- Line managers use a limited set of tracking and trending tools. Task completion and scheduling compliance are the primary management focus. There is an absence of performance or success criteria for processes (e.g., license commitments) and programs (e.g., corrective actions preventing recurring events).

Therefore, a number of utilities, including the Supply System, have initiated efforts to review and improve the FSAR. Before the Millstone issues were identified in IN 96-17, the Supply System initiated a Final Safety Analysis Report (FSAR) Upgrade Program as identified in the Performance Enhancement Strategy (PES). The schedule in the PES reflected a project completion and FSAR submittal to the NRC by 8/97. In addition to the PES initiative, the reasons for the FSAR Upgrade Project were provided during an NRC presentation on May 15, 1996 as follows:

- Plant Operations Committee (POC) assessment and rejection of safety evaluations

- FSAR identified inaccuracies

- Equipment part number errors and inconsistencies

- Redundant information

- Maintaining unnecessary historical information

Such an upgrade effort could be very manpower intensive and costly without a proper planning effort to define the verification approach and to limit the scope to the minimum effort required to provide a high confidence of an accurate and complete FSAR. The importance of preparing an effective project plan with guidelines for completing the effort consistent with the project objectives have been recognized and is the focus of this program plan.

1.2 Objectives of FSAR Upgrade Project

The objectives of the FSAR Upgrade Project identified in the PES are to rewrite the FSAR to ensure that it:

- Contains the information required by Regulatory Guide 1.70.
- Accurately reflects design and operating procedures.
- Can be relied upon for 10CFR50.59 safety evaluations.

An upgraded FSAR will accurately reflect the existing WNP-2 design, reflect all information required by Regulatory Guide 1.70, and consolidate current redundant data. This upgrade process will also allow for the development of an FSAR change process by which the future integrity of the document will be protected.

Additional definition of the FSAR Upgrade Project objectives were identified in the May 15, 1996, Supply System presentation to the NRC. Tasks to be completed as part of the FSAR Upgrade Project include:

- Remove material from the FSAR which was retained for "historical" reasons.
- Address the best methodology for inclusion and maintenance of FSAR figures.
- Assure consistent nomenclature throughout the FSAR and with present plant nomenclature. Replace vendor nomenclature with site specific nomenclature based on the Master Equipment List (MEL).
- Eliminate the separate Question and Responses sections of the FSAR and consolidate appropriate information into the main FSAR sections.
- Consolidate information from other appendices into the body of the FSAR, as appropriate.
- Correct technical inaccuracies.
- Remove non-essential information, consolidate redundant information into appropriate FSAR sections, and ensure compliance with Regulatory Guide 1.70, Revision 2.
- Define a more efficient and effective FSAR maintenance process with better

control of FSAR contents through establishment of a master electronic version.

There are a number of benefits to be derived from a FSAR Upgrade Project including:

- Better understanding of the relationship between 10CFR50, the design and licensing basis, industry codes, WNP-2 programs and procedures.
- Improved operability assessments.
- Improved 10CFR50.59 safety evaluations.
- Important complement to the Engineering training program.

1.3 Project Plan Development Basis and Approach

An upgrade effort as described above could be very manpower intensive and costly without a proper planning effort to define the upgrade approach, and to limit the scope to the minimum effort required to provide a high confidence of an accurate and complete FSAR. Such a planning effort would evaluate the current FSAR change process; past, current or planned programs which could be utilized to review portions of the FSAR; identify portions of the FSAR which are historical and not expected to change; and define the objectives, basis and source documents for conducting the upgrade reviews. This would help to narrow the scope of the upgrade and focus resources on those sections of the FSAR that need the most attention. For instance, some utilities have conducted or plan to conduct self assessments such as Safety System Functional Assessments (SSFA). Depending upon the scope and objectives of the SSFA, the results of the SSFA could be used as the review basis for the related sections of the FSAR. Some utilities may have completed or are in the process of completing Design Basis Documents (DBD). Again, such programs which may have been completed can be evaluated to determine the extent to which they can be used as the basis for reviews of sections of the FSAR. Current or planned DBD programs should be evaluated to assure that the process will verify sections of the FSAR to the maximum extent possible. A slight adjustment of the program objectives or process could result in substantial FSAR reviews in a cost effective manner.

Therefore, prior to initiating the FSAR Upgrade Project, the Supply System has decided to define and prepare an effective program plan. The plan will not only establish the structure for properly managing the effort, but also will help to limit the scope of the effort. The basic approach used to develop the plan was to review the FSAR change process to evaluate the effectiveness of that process in maintaining the FSAR consistent with changes made to the plant design, operation or administrative commitments in accordance with 10CFR50.59. Key WNP-2 personnel throughout the organization were interviewed; past, current, or planned programs related to FSAR reviews were evaluated;

and FSAR discrepancies which have already been identified were reviewed in order to quantify the level of review required in various FSAR sections. Based upon the interviews with key Supply System personnel, the source documents to establish the basis for the FSAR reviews were identified. After defining the overall scope of the upgrade effort, the guidelines for conducting the reviews, elimination of information in order to "rightsize" the FSAR, and disposition of discrepancies identified during the review were prepared. The overall process for conducting the upgrade reviews, along with the scope of the review, an initial schedule, and manpower estimates are incorporated into the Project Plan. Following Supply System management review, the project plan and guidelines will be validated by conducting a pilot review of some FSAR sections.

2.0 SCOPE OF FSAR UPGRADE

2.1 FSAR Chapters to Review and the Depth of Review

The FSAR Upgrade effort will involve a review of all chapters of the FSAR in order to incorporate and consolidate information, assure consistent nomenclature, eliminate unnecessary information, and to rewrite the FSAR consistent with Regulatory Guide 1.70. However, because of the complexity of some chapters and the cross-referencing to information in other sections, some chapters should be reviewed before others. In addition, past reviews have indicated some chapters may have greater inaccuracies than other chapters, or past efforts may have already provided a large degree of verification and upgrade. An example of this is Chapter 6 and 15 which have been substantially rewritten to incorporate the Operating License Amendment for Power Uprate. Another example includes portions of section 9.1 which have been reviewed and verified as part of a Quality Assurance Surveillance (296-029). Therefore, as part of the planning effort, a review and an evaluation of each of the FSAR chapters was completed to determine the extent of review required and in order to set a priority and order for chapter review.

A number of factors were considered in determining the extent of review required for various FSAR sections. These include:

1. The extent of any known discrepancies or problems
2. The number of SCNs and Amendments processed for a particular section
3. The complexity and relationship or level of redundancy with other sections
4. Past or current programs that relate to FSAR verification
5. The availability of future programs that could be used as a basis for section reviews
6. Schedule priorities, such as NRC Bulletin 96-02 regarding Heavy Loads
7. Incorporation of ITS information
8. Potential safety significance

Appendix A provides a summary of the level of effort required for each FSAR section.

2.2 Format and Content

The WNP-2 FSAR was written to the format and content requirements of Regulatory Guide 1.70, Revision 2. However, due to the inherent nature of the licensing process, and the philosophy and judgements made regarding the content and format required in the FSAR, the current FSAR has expanded to a format which is somewhat inconsistent with the Regulatory Guide, particularly with the number of Appendices. Also, there are many areas where the content is beyond the level of detail required by the Regulatory Guide, and some sections in which information which clearly establishes the licensing basis is absent. An example of this is in section 9.1 which includes very little information regarding WNP-2's licensing basis for compliance to NUREG-0612, "Control of Heavy Loads". If someone wants to know WNP-2's position on testing of lifting devices, for instance, they would be required to search the Licensing Basis Documents (LBDs) and review a large file of correspondence between the Supply System and the NRC.

An objective of the FSAR Upgrade Project is to return the FSAR to the format and content requirements of Regulatory Guide 1.70, Revision 2, and to provide a consistent, clear and concise statement of the WNP-2 licensing basis. This will require consolidation of some redundant information, including relevant information from Appendices, into the body of the FSAR; elimination of the NRC Questions and Responses; incorporating some information which is currently found in other licensing basis documents such as Operating License Amendments, Safety Evaluation Reports, and correspondence files; and elimination of some information not required by the Regulatory Guide which is beyond the licensed safety basis. Because of the number of people that will be involved with the project and the degree of rewrite anticipated, a Writers Guide and Style Guide are proposed as further discussed in section 4.2. The Writers Guide and Style Guide will be based upon Regulatory Guide 1.70, Revision 2 requirements, but include other writing and format style guidance which may currently exist at WNP-2 (such as, the procedure writers guide), and experience from other utility FSAR upgrade projects.

2.3 Archiving Historical Information

Currently the FSAR contains much historical information which was necessary to support initial licensing, but is no longer required or is impractical to update. An example of this is the siting information in Section 2.5. This information has not been changed since Amendment 18, and represents studies on the geology and seismology of the area to support siting of the plant. Although it represents part of the vast amount of information submitted to the NRC to support licensing, it is not something that can be changed since it is historical. A review during development of this Project Plan did not identify any special commitments to update the information with additional studies. Even though the information is not changed and therefore poses no substantial administrative burden there is no need to have the information clutter the updated FSAR. Therefore, the information

will be archived by first verifying that there is no information relevant to current plant operation and then replacing the information with a statement that references the reader to the appropriate FSAR amendment in which it was last revised. Appendix A provides additional information on those sections which contain information which could be archived.

2.4 Incorporation of NRC Questions and Responses and Other Appendices

Appendix D of the FSAR includes the questions from the NRC during initial licensing and the Supply System's responses. In some cases this information references sections of the FSAR where the response can be found. However, in most cases substantial information defining the licensed safety basis and specific commitments made by the Supply System are contained in these volumes. The information is arranged by question series. A cross-reference between the Question and Response (Q/R) sections and the main body of the FSAR could not be found. Although ZyINDEX can be used to search the FSAR to identify areas where a particular subject may be found, including the Q/R, this is a relatively new process. Also, not all users of the FSAR consistently use ZyINDEX when researching for 10CFR50.59 safety evaluations or to determine the extent of any licensing basis changes. Therefore, the Q/R in separate volumes adds unnecessary confusion and complications to the definition of the licensing basis. The Statements of Consideration associated with the FSAR update rule in 10CFR50.71(e) indicated that relevant information from NRC questions and responses should be incorporated into the FSAR. For these reasons, the Q/R will be reviewed and then any relevant and applicable information will be incorporated into the FSAR sections during the review and rewrite process.

2.5 Incorporation of ITS Information

WNP-2 is currently revising the Technical Specifications to the Improved Standard Technical Specifications (ITS). The planned date for implementation is October 1996. Converting to the ITS requires that certain information previously contained in the Technical Specifications be relocated to Licensee controlled documents which can be changed through the 10CFR 50.59 process. Much of the information will be relocated to the Licensee Controlled Specifications (LCS), which will be maintained and controlled as a separate document. Some of the remaining specifications removed from the current Technical Specifications will be relocated to plant procedures. Attachment B provides a preliminary list of other information which has been identified for relocation to the FSAR. This list was provide by members of the ITS conversion project team. However, much of the information proposed for incorporation is beyond the level of detail necessary in the FSAR. For instance, it is proposed that some of the Action Statements associated with Limiting Conditions of Operation be incorporated into the FSAR. It would seem that if that level of detail is necessary to assure compliance with the licensing basis, that it be included in the LCS which has a format more adaptable for that type of information. Also, if it is important for plant operators to know what actions

to take when certain conditions be met, it is better to have only two references, the Technical Specifications and the LCS to review. Such information included in the FSAR would not be easily found by plant operators. Any information from the Technical Specifications that is general in nature and simply establishes the licensing basis could be included into the FSAR. In addition to the information identified in Appendix B, there may be a need to incorporate some reference information to the ITS in Chapter 16, however this has minimal impact to the FSAR rewrite effort. Since there is still some uncertainty at WNP-2 regarding the information that should be relocated into the FSAR from the current Technical Specifications, section 4.1 includes a task for the FSAR Upgrade Project to further define the scope of any information which must be include in the FSAR from the ITS conversion.

2.6 Approach to FSAR Review and Degree of Verification

The objective of the WNP-2 FSAR Upgrade Project is to review and rewrite the FSAR to provide a complete, consistent, and concise description of the licensed safety basis. It is not intended to be a substantial streamlining and elimination of significant amounts of information. In fact some information will be incorporated into the FSAR if it is necessary to fully define the licensed safety basis. However, there is substantial detail in some sections which is beyond the requirements of Regulatory Guide 1.70, and is not part of the licensed safety basis. Such information will be removed after evaluating it against the screening guidelines and checklist included in Appendix D. Although the checklist is orientated to removal of information, the criteria will also be used for addition of information to the FSAR.

The FSAR review is not intended to be a complete line-by-line verification. The objective is to verify the accuracy and completeness of the description of principal safety design features of the Systems, Structures, and Components (SSCs), the assumptions in the safety analysis that assure compliance with regulatory requirements, and that the current plant design and operation is in conformance with the licensed safety basis. The FSAR and other licensing basis documents will be reviewed to assure that the FSAR provides a correct and concise statement of the WNP-2 licensing basis.

An example may help to illustrate the objectives of the review. The FSAR may state that a particular pump takes suction on a tank and that the tank has high and low level alarms and goes on further to provide the alarm setpoints. Assume that the FSAR also indicates that the low level alarm allows at least 30 minutes before the pump would trip on low-low level of the tank. For this particular case, the first part of the review will be to determine if the description of this system and these particular components are required by using the criteria and checklist in Appendix D. Assuming that the system provides an active safety function and a description of the pump and tank are required, the level of detail regarding the setpoints could be removed either on the basis that they are contained in another licensing basis document, the Technical Specifications, or that they are not assumed in the safety analysis. Likewise, the 30 minute time could be eliminated

if it was not included as an assumption in the safety analysis. If the safety analysis assumes that 30 minutes are available from the receipt of the alarm to allow adequate time for operator actions to initiate tank makeup, then the 30 minutes and the basis for the time is part of the licensed safety basis and should be included in the FSAR. This same safety basis may be stated in terms of the capacity in the tank between low alarm and pump trip. Again this information would be part of the licensed safety basis if the system provides an active safety function. The FSAR review would then verify that calculations exist which assure that either 30 minutes or the capacity between alarms, whichever is specified in the FSAR, is adequately addressed. If operator actions are assumed in the analysis, procedures would be reviewed to assure that the assumed actions have been included in the procedures.

As another example, if the FSAR says WNP-2 complies with Regulatory Guide 1.97, the project team will not verify compliance with every aspect of the Regulatory Guide. However, if the FSAR further describes how WNP-2 complies, such as by describing which emergency ventilation dampers have position indication in the control room, the project team will verify the control room position indication for those dampers. If the FSAR merely repeats compliance with Regulatory Guide 1.97 by stating that emergency ventilation dampers are provided with control room indication, the project team will verify the control room indication. If it is found that evaluations have been done for certain valves to exempt them from compliance, the project team will assure an adequate 10CFR50.59 safety evaluation exists and revise the FSAR to clarify implementation of Regulatory Guide 1.97 for emergency ventilation damper position indication.

2.7 Review of LBDs and Other Documents Potentially Affecting the FSAR

The FSAR Upgrade Project will also include a review of licensing basis documents (LBDs) to identify any commitments made to the NRC or potential revisions to the licensed safety basis which should be incorporated into the FSAR. This will include a review of documents most likely to reflect a commitment which changes the licensing basis, discrepancies between the FSAR and design basis, and evaluations which justify a nonconformance and could become a de facto change to the licensing basis. The following describes the document reviews to be conducted and provides the basis for some reviews which are not considered warranted:

1. LBD files: A review of correspondence between the Supply System and the NRC (letters, Licensee Event Reports, Notice of Violation Responses, etc.) will be reviewed for additional analyses or descriptions of design features or administrative controls which constitute part of the licensing basis (for example, the document files which provide the Supply System's response to NUREG 0612, Control of Heavy Loads), or licensing commitments which address compliance to regulatory requirements. Broad general statements and/or parameters will not be considered as commitments. Examples of commitments include explicit and specific

statements that alter existing design basis requirements.

2. Nonconformances: Any discrepancy between the FSAR and the actual design and operation of the plant should be identified on a Problem Evaluation Request (PER). Therefore, PERs can identify discrepancies, and the evaluation of such discrepancies, which may require changes to the FSAR. A review of all PERs which potentially affect the FSAR will be included in the FSAR Upgrade Program. A review of the current Plant Tracking Log (PTL) database was conducted to determine the best way to find such PERs and the number which exist. Although Codes exist for FSAR (GD024) and Final Safety Analysis Report (GD027), it was determined that they have not been used consistently. A search of all active and historical PERs with FSAR in the Summary Description identified approximately 200 PERs which should be reviewed.

3. JCOs and Operability Determinations: Any analysis to justify continued operation, operability determinations, or Follow-up Assessment of Operability (FAO) could result in justifications for design or operation which is not in compliance with the licensing basis. Some of these evaluations can result in direct changes to the licensing basis or a de facto change which should be supported by a 10CFR50.59 safety evaluation. Some examples of such changes were identified during the limited review to prepare the project plan. Therefore, the FSAR Upgrade Project will include a review of operability determinations. Sorting of the PTL will assist in identifying past FAOs, with the exception of those which were tracked by other means prior to approximately 1993. The project team will review any prior to this time which are readily available and accessible.

4. Reportability Determinations: Like operability determinations, the evaluations to support whether a nonconformance is reportable can result in the need for a change to the licensing basis. Some examples of such changes were identified during the limited review to prepare the project plan. Therefore, the FSAR Upgrade Project will include a review of reportability determinations. Since reportability and operability evaluations are often conducted for the same issue, it is anticipated that there will be some overlap between the review of reportability determinations and the operability determinations. Reportability determinations are not tracked in PTL like FAOs. Therefore, the review will be based upon the Reportability Evaluation binders in the Licensing Library.

5. Other Document Reviews: Other documents which could result in changes to the licensing basis include temporary alterations or clearance

orders which remove equipment from operation indefinitely and therefore become a de facto change to the design and licensing basis. During the project plan review, it was determined that Engineering is currently conducting a review of these programs to either remove them, or prepare a modification to the plant. Therefore, the project team will obtain the results of this review and not conduct a separate review.

6. Design Change Packages: It was determined that a review of design changes over the life of the plant would be very manpower intensive and would not be necessary. Although there is some room for human error, it was determined that most people in the organization understood that a design change would require a 10CFR50.59 safety evaluation and an evaluation of the need for a change to the licensing basis. The area where there was the greatest uncertainty for a 10CFR50.59 safety evaluation was for engineering evaluations to justify discrepancies between the licensing basis and current plant design and operation. Such areas will be adequately addressed with the reviews described above. Also, a review of design changes will not necessarily identify discrepancies with the original licensing basis. Since the nature of the project is to review the entire FSAR for completeness and accuracy by evaluating design features in the licensing basis against design documents, a specific review of design changes in not warranted. Design changes will be reviewed as necessary for any discrepancy resolution. In addition, during the pilot review to validate the project plan, a sampling of design changes will be evaluated to determine if FSAR changes were properly incorporated.

2.8 Approach to Optimizing the FSAR Content

One of the objectives of the FSAR Upgrade project, is to eliminate excessive detail redundant and repetitive information, and any information which is not required by Regulatory Guide 1.70 or is beyond the licensed safety basis. The objective is not to complete a substantial streamlining of the FSAR, but to assure that the FSAR provides a complete, accurate and concise description of the licensed safety basis. Some areas of the FSAR contain excessive detail while other areas do not completely describe the licensed safety basis, such as section 9.1 regarding compliance to NUREG-0612, "Control of Heavy Loads." The review effort includes a review of the material to determine if it can be removed from the FSAR or should be relocated elsewhere. Additionally, documents will be reviewed, as described above, to identify information which should be incorporated into the FSAR to clearly define the licensing basis. Appendix D provides guidelines in the form of a checklist which could be incorporated into the project instructions and used to guide the review. The checklist can be used when evaluating the removal of information as well as whether information should be incorporated into the FSAR.