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SUBJECT: LER 92-043-00:on 921202,determined that discrepancy existed between plant procedures & monitoring range of RPV instrumentation in MCR & at remote shutdown panel.Caused by insufficient communication.Procedures revised.W/930201 ltr.

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Docket No. 50-397

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U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

SUBJECT: NUCLEAR PLANT WNP-2, OPERATING LICENSE NPF-21
LICENSEE EVENT REPORT NO. 92-043-01

Transmitted herewith is Licensee Event Report No. 91-043-01 for the WNP-2 Plant. This report is submitted in response to the report requirements of 10CFR50.73 and discusses the items of reportability, corrective action taken, and action taken to preclude recurrence. This supplement is submitted to provide final results from the root cause analysis.

Sincerely,

J. W. Baker
WNP-2 Plant Manager (Mail Drop 927M)

JWB/RP/cgh
Enclosure

cc: Mr. J. B. Martin, NRC - Region V
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LICENSEE EVENT REPORT (LER)

FACILITY NAME (1)	DOCKET NUMBER (2)	PAGE (3)
Washington Nuclear Plant - Unit 2	0 5 0 0 0 3 9 7	1 OF 7

TITLE (4)

WEAKNESSES IN PROCEDURES FOR SHUT DOWN FOLLOWING A FIRE RESULTING FROM INADEQUATE COMMUNICATIONS

EVENT DATE (5)			LER NUMBER (6)			REPORT DATE (7)			OTHER FACILITIES INVOLVED (8)	
MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	MONTH	DAY	YEAR	FACILITY NAMES	DOCKET NUMBERS(S)
1 2	0 2	9 2	9 2	0 4 3	0 1	0 2	0 1	9 3		0 5 0 0 0
										0 5 0 0 0

OPERATING MODE (9)	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following) (11)				
1					
POWER LEVEL (10)	20.402(b)	20.405(C)	50.73(a)(2)(iv)	77.71(b)	
1 0 0	20.405(a)(1)(i)	50.36(c)(1)	X 50.73(a)(2)(v)	73.73(c)	
	20.405(a)(1)(ii)	50.36(c)(2)	50.73(a)(2)(vii)	OTHER (Specify in Abstract below and in Text, NRC Form 366A)	
	20.405(a)(1)(iii)	50.73(a)(2)(i)	50.73(a)(2)(viii)(A)		
	20.405(a)(1)(iv)	50.73(a)(2)(ii)	50.73(a)(2)(viii)(B)		
	20.405(a)(1)(v)	50.73(a)(2)(iii)	50.73(a)(2)(x)		

LICENSEE CONTACT FOR THIS LER (12)

NAME	TELEPHONE NUMBER
R. J. Poche, Licensing Engineer	AREA CODE 5 0 9 3 7 7 - 4 1 4 5

COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS		CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS	

SUPPLEMENTAL REPORT EXPECTED (14)		EXPECTED SUBMISSION DATE (15)	MONTH	DAY	YEAR
YES (If yes, complete EXPECTED SUBMISSION DATE)	X NO				

ABSTRACT (16)

On December 2, 1992, it was determined that a discrepancy between plant procedures and the monitoring range of reactor pressure vessel (RPV) instrumentation in the Main Control Room and at the Remote Shutdown Panel could have degraded the ability to remove residual heat during a post-fire plant shut down. The procedure governing operation of the Residual Heat Removal (RHR) System in the Alternate Shutdown Cooling mode prescribed operator actions at RPV levels that were outside the range of these instruments. Additionally, comparison of the Appendix R Shutdown Analysis and Abnormal Operating Procedures identified three other items involving procedural implementation and Shutdown Analysis requirements that could have affected operator response following a fire.

The root cause for these conditions was insufficient interdepartmental communication. A contributing cause was inadequately defined policy regarding responsibility for ensuring actions were reflected in procedures. As corrective action, the deficiencies identified in this report have been corrected in procedures, and actions will be undertaken to address programmatic issues involving Appendix R program implementation. The described conditions did not involve failure of any plant components or systems.

WNP-2 has not experienced a fire that required plant shut down. Consequently, the conditions described in this report did not adversely affect plant safety. However, if a fire had occurred, fire detection systems, suppression systems, and barriers, or equivalent compensatory measures, were available to mitigate an event if it had occurred.

Plant Conditions

Reactor Power Level - 100%
Plant Mode - 1

Event Description

On December 2, 1992, it was determined that a discrepancy between plant procedures and the monitoring range of reactor pressure vessel (RPV) level instruments located in the Main Control Room and at the Remote Shutdown Panel could have degraded the ability to remove residual heat during a post-fire plant shutdown. This condition was recognized after a review identified that the procedure governing operation of the Residual Heat Removal (RHR) System in the Alternate Shutdown Cooling mode prescribed operator actions at RPV levels that were outside the range of these instruments.

The instruments involved in this discrepancy, MS-LR/PR-R623A, MS-LR/PR-R623B, and MS-LI-10 provide fire-protected indication of RPV level, and facilitate plant operation in the Alternate Shutdown Cooling mode following certain postulated fire events. Further comparison of the Appendix R Shutdown Analysis and Abnormal Operating Procedures also identified three other reportable items involving procedural implementation of actions credited in the Shutdown Analysis and required actions that were not adequately identified in the Shutdown Analysis. It is believed that these additional items could have adversely affected operator response in the event of a fire.

Immediate Corrective Actions

No immediate corrective actions were necessary. However, procedures have been revised to correct the conditions described in this report.

Further Evaluation and Corrective Action

A. Further Evaluation

1. The discrepancy between shutdown panel instruments used to monitor RPV level and plant procedures was identified by an Operations Department engineer during a review of fire-related operator actions, and was documented on a Problem Evaluation Request (PER) on November 11, 1992. The PER described three RPV level instruments, MS-LR/PR-R623A and MS-LR/PR-R623B (main control room), and MS-LI-10 (remote shutdown panel). The concern was that these instruments only provide RPV level monitoring in the -150" to +60" range.

The procedure governing Residual Heat Removal (RHR) System operation in the Alternate Shutdown Cooling mode, PPM 2.4.2, Residual Heat Removal System, requires flooding of the RPV to the level of the Main Steam Lines (+130"), which is outside the monitoring range for these instruments. The Appendix R Shutdown Analysis assumes that operators may be required to use Alternate Shutdown Cooling to remove residual heat following a fire because not all of the equipment necessary for normal shutdown evolutions is fire-protected.

The monitoring range of these RPV level instruments has been evaluated by Engineering and found to be acceptable to support required plant operations and satisfy design requirements. It was the method prescribed in procedure PPM 2.4.2 for achieving Alternate Shutdown Cooling operation that was inadequate.

In addition to the RPV level monitoring concern, several other items involving required operator actions were identified. These additional items involved required operator actions that were not adequately identified in the Appendix R Shutdown Analysis, and inadequate implementation of required operator actions that were identified in the Appendix R Shutdown Analysis. These items were identified during a review of plant procedures.

This review was initiated to ensure that operator actions required by the Appendix R Shutdown Analysis were adequately reflected in implementing procedures, and was performed as a corrective action for a previous similar event described in LER 50-397/92-018. When plant management assigned the action to perform this review, it was their understanding that the review scope would include a comprehensive evaluation of all operator actions required by the Appendix R Shutdown Analysis.

However, the design and plant organizations that performed this review did not similarly understand the intended review scope. Consequently, the initial review only considered operator actions following a fire outside the Main Control Room. As a result, identification of some items was delayed until the review of required actions following a fire in the Main Control Room was completed.

It has been determined that three of the additionally identified items could have adversely affected operator response to a fire. These three additional items, and the previously described item involving Alternate Shutdown Cooling operation following a fire, have been inadequately implemented in plant procedures since initial plant startup. The three additionally identified items are summarized below:

1) Water leg pumps for RHR pumps A and B are not fire-protected. Consequently, it is necessary to start the RHR pumps within one hour following a fire in order to ensure that RHR piping remains full. These actions were not adequately identified or reflected in procedures.

2) Circuits at local control panels for the emergency diesel generators that are associated with the automatic synchronization feature are not fire-protected. An attempt to automatically synchronize from the local control panels could result in damage to the diesel generator logic that would preclude synchronization and any subsequent attempts to start. Precautionary guidance advising operators to only use the manual synchronization feature following a fire was not adequately reflected in procedures.

3) In order to prevent propagation of smoke and gasses to cable spreading areas and critical switchgear rooms following a fire in the control room chiller area, it is necessary to secure several HVAC fans. The equipment specific identifiers for these fans were incorrectly stated in procedures.

2. The conditions described in this report were documented on November 11, 1992. Following an extensive investigative effort it was determined that these items were reportable, and necessary notifications were made under 10CFR50.72(b)(2)(iii) on December 2, 1992. These conditions are also reportable under 10CFR50.73(a)(2)(v) as conditions that could have prevented fulfillment of the safety function of structures or systems that are needed to shut down the reactor and maintain it in a safe shutdown condition.

3. The root cause for the described procedural implementation inadequacies was a deficiency involving failure to ensure sufficient interdepartmental communication. This is a management/managerial methods category root cause. Implementation of Appendix R Shutdown Analysis requirements in plant procedures was not fully achieved due to a weak interface between design and plant organizations. This root cause is considered programmatic due to a number of similar discrepancies involving procedural implementation of operator actions that are needed to support Appendix R requirements that have been recently identified.

   A contributing cause was identified involving inadequately defined policy as it pertains to Appendix R program responsibilities. This is a management/managerial methods category root cause. Responsibility for ensuring that operator actions credited in the Appendix R Shutdown Analysis were implemented in procedures was assigned diffusely among several design and plant organizations.

4. The condition described in this report did not involve any structures, components, or systems that were inoperable at the start of the event, nor did it involve failure of a plant component or system.

B. Further Corrective Action

In response to the conditions described in this report, the following actions have been taken:

1. PPMs 4.12.1.1 and 4.12.4.1 were revised, as required, to correct the conditions described in this report.

2. PPM 2.4.2 was revised to include a separate section for Alternate Shutdown Cooling operation, and account for post-fire conditions.

3. Engineering procedure, EDP 1.27, Transmitting Action Items from Engineering to External Organizations was recently created. This procedure will provide additional assurance that engineering information is transmitted to the plant organizations responsible for implementation.

Additionally, the following corrective actions are also planned:

1. An assessment will be performed to evaluate the interface between design organizations and other plant organizations. The scope of this assessment will include an examination of this interface for Appendix R related matters, and is scheduled to be performed by April 1993.

2. Plant management will perform an assessment of the process established in EDP 1.27 for closure of engineering information transmitted to plant organizations. This assessment will evaluate the timeliness and effectiveness of the process described in EDP 1.27, and is scheduled for completion by July 31, 1993.

3. Inter-organizational communications and responsibilities within the Appendix R implementation process, including responsibility for ensuring actions are adequately reflected in procedures, will be evaluated. These relationships will be clarified and redefined, as necessary, based on the results of this evaluation. This action is scheduled for completion by September 1, 1993.

4. A review of the Appendix R Shutdown Analysis and related design documents will be performed to ensure operator actions identified therein have been adequately reflected in plant procedures. Conversely, plant procedures will be reviewed to ensure Appendix R related operator actions identified therein have bases in design documents. Performance of these reviews, and any necessary procedure or design document changes, will be completed by September 1, 1993.

Safety Significance

WNP-2 has not experienced a fire that adversely affected the ability to shut down the plant during the period when required operator actions were not adequately reflected in procedures. Consequently, the conditions described in this report did not have an adverse affect on safe operation of the plant, or the health and safety of plant personnel or the general public. However, if a fire had occurred during the time when Alternate Shutdown Cooling requirements were inadequately reflected in procedures, fire detection, suppression, and barrier systems were either operable or required compensatory measures had been implemented. The availability of fire detection and suppression equipment ensured the ability to promptly identify, confine, and extinguish fires, and the availability of fire barriers and barrier penetrations minimized the possibility of a fire related to challenge safety systems.

Similar Events

A previous occurrence involving inadequate procedural implementation of required operator actions necessary to mitigate the consequences of a fire and Shutdown Analysis deficiencies was described in LER 92-018. The conditions described in this report were identified by a review performed as a corrective action for this previous event.

EIIS Information

Text Reference	EIIS Reference System	EIIS Reference Component
Main Control Room	NA	--
Remote Shutdown Panel	--	PL
Alternate Shutdown Cooling Mode of RHR	BO	—
Residual Heat Removal System (RHR), Pump	BO	P
Reactor Core Isolation Cooling (RCIC) System, Pump	BN	P
High Pressure Core Spray (HPCS) System, Pump	BG	P
Critical Switchgear Area HVAC, Fans	VI	FAN
Control Room Chiller	KM, VI	CHU
Emergency Diesel Generator	EK	DG
Reactor Pressure Vessel (RPV)	AD	BLR
Level Indicators MS-LI-10,-MS-LR/PR-R623A /B	SB	LI