

CATEGORY 1

REGULATORY INFORMATION DISTRIBUTION SYSTEM (RIDS)

ACCESSION NBR: 9705200216 DOC. DATE: 97/05/09 NOTARIZED: NO DOCKET #
 FACIL: 50-397 WPPSS Nuclear Project, Unit 2, Washington Public Powe 05000397
 AUTH. NAME AUTHOR AFFILIATION
 DIS, P.R. Washington Public Power Supply System
 RECIP. NAME RECIPIENT AFFILIATION
 Document Control Branch (Document Control Desk)

SUBJECT: Responds to NRC 970411 ltr re violations noted in insp rept
 50-397/97-04. Corrective actions: overcurrent relay settings
 for SSW pump & LPCS pump were revised.

DISTRIBUTION CODE: IE01D COPIES RECEIVED: LTR 1 ENCL 1 SIZE: 3
 TITLE: General (50 Dkt)-Insp Rept/Notice of Violation Response

NOTES:

RECIPIENT ID CODE/NAME	COPIES LTTR ENCL	RECIPIENT ID CODE/NAME	COPIES LTTR ENCL
PD4-2 PD	1 1	COLBURN, T	1 1
INTERNAL: ACRS	2 2	AEOD/SPD/RAB	1 1
AEOD/TTC	1 1	DEDRO	1 1
FILE CENTER	1 1	NRR/DISP/PIPB	1 1
NRR/DRCH/HHFB	1 1	NRR/DRPM/PECB	1 1
NRR/DRPM/PERB	1 1	NUDOCS-ABSTRACT	1 1
OE DIR	1 1	OGC/HDS3	1 1
RGN4 FILE 01	1 1		
INTERNAL: LITCO BRYCE, J H	1 1	NOAC	1 1
NRC PDR	1 1	NUDOCS FULLTEXT	1 1

NOTE TO ALL "RIDS" RECIPIENTS:
 PLEASE HELP US TO REDUCE WASTE! CONTACT THE DOCUMENT CONTROL DESK,
 ROOM OWFN 5D-5 (EXT. 415-2083) TO ELIMINATE YOUR NAME FROM
 DISTRIBUTION LISTS FOR DOCUMENTS YOU DON'T NEED!

TOTAL NUMBER OF COPIES REQUIRED: LTTR 20 ENCL 20

C
A
T
E
G
O
R
Y

1

D
O
C
U
M
E
N
T



WASHINGTON PUBLIC POWER SUPPLY SYSTEM

P.O. Box 968 • Richland, Washington 99352-0968

May 9, 1997
GO2-97-091

Docket No. 50-397

U.S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, D.C. 20555

Gentlemen:

Subject: **WNP-2, OPERATING LICENSE NPF-21
NRC SPECIAL INSPECTION REPORT 97-04,
RESPONSE TO NOTICE OF VIOLATION**

Reference: Letter dated April 11, 1997, TP Gwynn (NRC) to JV Parrish (SS), "NRC Special Inspection Report 50-397/97-04 and Notice of Violation"

The Supply System's response to the referenced Notice of Violation, pursuant to the provisions of Section 2.201, Title 10, Code of Federal Regulations, is enclosed. The Supply System is only responding to Violation A of Inspection Report 97-04. As noted in the reference, the Supply System has already adequately addressed on the docket actions associated with Violation B.

Should you have any questions or desire additional information regarding this matter, please call me or Mr. J. D. Arbuckle at (509) 377-4601.

Respectfully,


P. R. Bemis (Mail Drop PE23)
Vice President, Nuclear Operations

Attachment

200015

cc: EW Merschoff - NRC RIV
KE Perkins, Jr. - NRC RIV, Walnut Creek Field Office
TG Colburn - NRR
NRC Sr. Resident Inspector - 927N
DL Williams - BPA/399
PD Robinson - Winston & Strawn

9705200216 970509
PDR ADCK 05000397
Q PDR



11/
I 001

NRC SPECIAL INSPECTION REPORT 97-04, RESPONSE TO NOTICE OF VIOLATION

Attachment

Page 2 of 2

The multiplication factor of 1.65 used in the new calculation to derive the IOC settings for the SSW and LPCS pumps was not sufficient to account for all possible variations in starting currents. A survey of industry practice confirmed that the multiplication factor needs to be greater than 1.7 to account for the asymmetry in the motor starting currents due to variations in the prestarting voltages, DC offset, and motor saturation effects not accounted for in the LRC test data. For the SSW pump, a non-conservative linear extrapolation of low voltage test data to rated voltage for LRC also contributed to the low IOC setting.

CORRECTIVE STEPS TAKEN AND RESULTS ACHIEVED

The overcurrent relay settings for the SSW pump and the LPCS pump were revised using multiplication factors of greater than 2.0 to ensure the pumps will not be susceptible to spurious trips.

A discussion of lessons learned from this event and a discussion pertaining to conservative decision making was included in training for Design and Projects Engineering personnel.

CORRECTIVE STEPS THAT WILL BE TAKEN TO AVOID FURTHER VIOLATIONS

The methodology to derive the IOC settings for emergency core cooling system and balance of plant pump breakers will be reviewed to validate the proper magnitude of multiplication factors used in deriving the IOC trip settings. The IOC settings for pump breakers will then be revised as necessary.

The design change process will be reviewed to ensure there is sufficient formal guidance for validation of design inputs from vendors. Additional detail of corrective actions associated with this event can be obtained from License Event Report 96-009, issued on January 22, 1997.

DATE WHEN FULL COMPLIANCE WILL BE ACHIEVED

Full compliance was achieved by December 22, 1996 when the IOC relay settings for the SSW pump and LPCS pump breakers were revised to ensure both pumps will not be susceptible to spurious trips.



NRC SPECIAL INSPECTION REPORT 97-04, RESPONSE TO NOTICE OF VIOLATION

Attachment

Page 1 of 2

Violation A

RESTATEMENT OF VIOLATION

10 CFR Part 50, Appendix B, Criterion III (Design Control) states, "Measures shall be established to assure that applicable regulatory requirements and the design basis . . . are correctly translated into specifications, drawings, procedures, and instructions."

Contrary to the above, as of January 30, 1996, the licensee failed to assure that applicable regulatory requirements for assuring that safety-related pumps would operate as required were correctly translated into specifications and procedures. Specifically, Plant Modification Record (PMR) 85-0528-0, "Protective Relay Coordination Study and Installation" established an instantaneous overcurrent trip setpoint for Service Water Pump 1A and the low pressure core spray pump which was nonconservative and were too close to actual pump motor starting currents. This resulted in the trip of a Service Water Pump 1A on a routine start.

This is a Severity Level IV violation (Supplement 1).

RESPONSE TO VIOLATION A

The Supply System accepts this violation.

REASON FOR VIOLATION

The spurious operation of an instantaneous overcurrent (IOC) trip unit caused a standby service water (SSW) pump motor breaker to trip during a manual start of the pump. The IOC units of the motor breakers for SSW pump 1A and the low pressure core spray (LPCS) pump had been recently re-calibrated to address deficiencies in the original overcurrent protection design. Prior to the breaker trip, the SSW pump had been started successfully seven times since the IOC units had been recalibrated.

A calculation performed in 1982 was used to derive the original IOC setting for the SSW pump motor breaker. This calculation used vendor preliminary design data for the motor locked rotor current (LRC) and a multiplication factor of 1.92. The calculation did not provide a documented basis for the 1.92 multiplication factor. A new calculation was used to support revised IOC relay settings for the SSW and LPCS pump motors. This calculation used motor test data instead of design data for LRC, and a multiplication factor of 1.65. The 1.65 multiplication factor conforms to a recommendation in IEEE/ANSI standard C37.96 that a minimum factor of 1.65 be used to account for trip device variables. For the SSW pump motor, the value of LRC was obtained from the motor manufacturer's certified motor test data with the test conducted at 19 percent rated voltage. The 19 percent LRC test value was then converted to LRC at rated voltage using a linear ratio of rated voltage to test voltage.

