ACCELERATED DISTRIBUTION DEMONSTRATION SYSTEM

REGULATORY INFORMATION DISTRIBUTION SYSTEM (RIDS)

ACCESSION NBR:8905040189 DOC.DATE: 89/04/26 NOTARIZED: NO DOCKET #
FACIL:50-397 WPPSS Nuclear Project, Unit 2, Washington Public Powe 05000397
AUTH.NAME AUTHOR AFFILIATION
WASHINGTON,S.L. Washington Public Power Supply System
POWERS,C.M. Washington Public Power Supply System
RECIP.NAME RECIPIENT AFFILIATION

SUBJECT: LER 88-030-00:on 880825,RPS actuations caused by loss of power on both RPS divs due to misapplication of switch type.
W/8 ltr.

DISTRIBUTION CODE: IE22D COPIES RECEIVED:LTR 1 ENCL 1 SIZE: 6
TITLE: 50.73/50.9 Licensee Event Report (LER), Incident Rpt, etc.

NOTES:

	RECIPIENT ID CODE/NAME	COPIES LTTR	COPIES ENCL	RECIPIENT ID CODE/NAME	COPIES LTTR	COPIES ENCL
	PD5 LA	1	1	PD5 PD	1	1
	SAMWORTH,R	1	1			
INTERNAL:	ACRS MICHELSON	1	1	ACRS MOELLER	2	2
	ACRS WYLIE	1	1	AEOD/DOA	1	1
	AEOD/DSP/TPAB	1	1	AEOD/ROAB/DSP	2	2
	DEDRO	1	1	IRM/DCTS/DAB	1	1
	NRR/DEST/ADE 8H	1	1	NRR/DEST/ADS 7E	1	0
	NRR/DEST/CEB 8H	1	1	NRR/DEST/ESB 8D	1	1
	NRR/DEST/ICSB 7	1	1	NRR/DEST/MEB 9H	1	1
	NRR/DEST/MTB 9H	1	1	NRR/DEST/PSB 8D	1	1
	NRR/DEST/RSB 8E	1	1	NRR/DEST/SGB 8D	1	1
	NRR/DLPQ/HFB 10	1	1	NRR/DLPQ/QAB 10	1	1
	NRR/DOEA/EAB 11	1	1	NRR/DREP/RPB 10	2	2
	NRR/DRIS/SIB 9A	1	1	NUDOCS-ABSTRACT	1	1
	REG FILE 02	1	1	RES/DSIR/EIB	1	1
	RES/DSR/PRAB	1	1	RGN5 FILE 01	1	1
EXTERNAL:	EG&G WILLIAMS,S	4	4	FORD BLDG HOY,A	1	1
	L ST LOBBY WARD	1	1	LPDR	1	1
	NRC PDR	1	1	NSIC MAYS,G	1	1
	NSIC MURPHY,G.A	1	1			

R I D S / A D D S

R I D S / A D D S

NOTE TO ALL "RIDS" RECIPIENTS:

PLEASE HELP US TO REDUCE WASTE! CONTACT THE DOCUMENT CONTROL DESK, ROOM P1-37 (EXT. 20079) TO ELIMINATE YOUR NAME FROM DISTRIBUTION LISTS FOR DOCUMENTS YOU DON'T NEED!

TOTAL NUMBER OF COPIES REQUIRED: LTTR 44 ENCL 43

NRC Form 366
(9-83)

U.S. NUCLEAR REGULATORY COMMISSION
APPROVED OMB NO. 3150-0104
EXPIRES: 8/31/88

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 0 5

TITLE (4) RPS Actuations Caused By Loss Of Power On Both RPS Divisions - Due To Mis-Application Of Switch Type

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 NUMBER(S)
										0 5 0 0 0
0 8	2 5	8 8	8 8	— 0 3 0	— 0 1	0 4	2 6	8 9		0 5 0 0 0

OPERATING MODE (9)	4	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following) (11)			
POWER LEVEL (10)	0 0 0	20.402(b)	20.405(c)	X 50.73(a)(2)(iv)	73.71(b)
		20.405(a)(1)(i)	50.36(c)(1)	50.73(a)(2)(v)	73.71(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
	AREA CODE
S.L. Washington, Compliance Engineer	5 0 9 — 3 7 7 — 2 0 8 0

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

CAUSE	SYSTEM	COMPONENT	MANUFAC-TURER	REPORTABLE TO NPRDS	CAUSE	SYSTEM	COMPONENT	MANUFAC-TURER	REPORTABLE TO NPRDS

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

ABSTRACT (Limit to 1400 spaces, i.e., approximately fifteen single-space typewritten lines) (16)

This supplemental report changes the reportability status of the August 26, 1988 event from not reportable per 10CFR50.73 to reportable.

On August 25, 1988 at 2211 hours and again on August 26, 1988 at 1553 hours, a full Reactor Protection System (RPS) actuation occurred. Both events occurred during performance of a channel functional test and calibration of the RPS Bus Electrical Protection Assembly (EPA) breakers. The cause of these events is switch overtravel, which simultaneously deenergized both divisions of RPS.

The loss of both divisions of RPS power also causes the isolation of Nuclear Steam Supply Shutoff System (NS^4) Groups 1,2,4 (partial only), 5,6 and 7. All NS^4 isolation valves either actuated as designed or were closed prior to the NS^4 trip. The outboard mainsteam line isolation valves were closed prior to both events. Both Residual Heat Removal Shutdown Cooling Loop B and Reactor Water Cleanup System valves were isolated just prior to each event in anticipation of the momentary loss of power of an RPS Bus which would, by design, isolate the outboard and/or inboard containment isolation valves for these systems.

Plant Operators responded to both events by returning the RPS power supply select switch to the normal position and resetting the scram. For both events, RHR Shutdown Cooling Loop B was returned to operation within 10 minutes and the RWCU System was placed back in service within 12 minutes.

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	
Washington Nuclear Plant - Unit 2	0 5 0 0 0 3 9 7	8 8	— 0 3 0	— 0 1	0 2 OF 0 5

TEXT *(If more space is required, use additional NRC Form 366A's)* (17)

Abstract (cont'd)

The root cause of these events is the design limitations of the power transfer switch. The switch is a break-before-make configuration and is subject to overtravel during manipulation.

An engineering analysis will be performed to evaluate options for a more reliable power transfer scheme. Additionally, a caution tag was placed on the switch to serve as a reminder that the switch is not mechanically prevented from overtraveling the desired position.

There is no safety significance associated with these RPS actuations since there was no actual initiating event. All safety actuations occurred as designed. This event posed no threat to the health and safety of the public or Plant personnel.

Plant Conditions

Power Level - 0%
PLant Mode - 4 (Cold Shutdown)

Event Description

This supplemental report changes the August 26, 1988 RPS actuation from not reportable per the requirements of 10CFR50.73 to reportable. The change in reportability status is a corrective action in our response to Notice of Violation "B" Inspection Report 88-24.

On August 25, 1988, at 2211 hours, while performing a channel functional test and calibration of the Reactor Protection System (RPS) Bus "A" Electrical Protection Assembly (EPA) breakers, a full RPS actuation occurred due to a momentary loss of power to both divisions of RPS. At the time of the event, a Plant Operator was transferring RPS "A" power from its alternate to normal power supply as called for in the procedure. During the transfer the RPS Power Supply Select switch overtraveled, deenergizing both RPS Bus "B" and "A".

On August 26, at 1553 hours, a second identical event occurred while performing a channel functional test and calibration of the RPS Bus "B" EPA breakers. The full RPS actuation occurred due to the momentary loss of power to both divisions of RPS. Because of the RPS actuation on the previous day, it was discussed and recognized that transferring from the alternate to normal power supply could cause a full RPS actuation. Management direction was given to proceed with the power supply transfer to help in understanding the event of the previous day.

The loss of both divisions of RPS power causes the isolation of Nuclear Steam Supply Shutoff System Groups 1,2,4 (partial only), 5,6, and 7. For these events the following actuations occurred:

NS^4 Group 1 - Main Steamline Isolation and Drainline Valves (MSIVs). For the August 25, 1988 event, the inboard (MSIVs) isolated. The inboard (MSIVs) remained closed after the August 25, 1988 event and were closed at the time of the August 26, 1988 event. The outboard MSIVs were closed prior to both events. All drainline valves were closed prior to both events.

NS[4] Group 2 - Reactor Water Sample Valves. These valves were closed prior to both events.

NS[4] Group 4 - Miscellaneous Balance of Plant (BOP). Only four valves in this group (floor drain and equipment drain valves) are controlled by RPS power. These valves isolated during both events.

Group 5 - RHR and Traversing Incore Probe (TIP). All valves in this group were closed prior to both events.

Group 6 - RHR - Shutdown Cooling System. Prior to both events, as noted in the discussion above, the operating RHR "B" Loop was isolated in anticipation of the momentary loss of an RPS Bus which would isolate the outboard and/or inboard valves in this group. As a result, all valves in this group were closed prior to both events.

Group 7 - RWCU System. Again, prior to both events, in anticipation of the outboard and/or inboard isolation valve closing due to the momentary loss of an RPS Bus during the power supply transfer, all valves in this group were closed prior to both events.

In addition, the design of the RPS power supply is such that if either RPS power bus loses power for an extended period of time, the trip relays of the Reactor Building Exhaust Plenum Process Radiation Monitors ("Z" Signal) will deenergize (A Non-Engineered Safety Feature Trip) in the affected RPS division. During a normal RPS power transfer and for both of these events, the trip relays were unaffected due to the capacitance inherent in the power supplies of the Process Radiation Monitor circuitry.

Immediate Corrective Action

Plant Operators responded to the August 25, 1988 event by returning the RPS transfer switch to normal and resetting the scram. RHR Shutdown Cooling Loop B was returned to operation at 2220 hours. The RWCU system was back in service at 2223 hours. All NS[4] isolations were reset and returned to their pre-event lineup, with the exception of the inboard MSIVs which were left closed.

Plant Operators responded to the August 26, 1988 event by placing the RPS transfer switch to normal and resetting the scram. RHR Shutdown Cooling Loop B was restored to operation at 1601 hours. The RWCU system was back in service at 1603 hours. All other NS[4] isolations were reset and returned to their pre-event lineup.

Further Evaluation and Corrective Action

A. Further Evaluation

These events are reportable per 10CFR50.73(a)(2)(iv) an Engineered Safety Feature Actuation. This supplemental report is submitted to change the reportability of the second RPS actuation.

There were no structures, systems, or components inoperable prior to this event which contributed to the event.

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	
Washington Nuclear Plant - Unit 2	0 5 0 0 0 3 9 7	8 8	0 3 0	0 1	0 4 OF 0 5

TEXT (If more space is required, use additional NRC Form 366A's) (17)

The cause of both of these events is RPS power supply transfer switch overtravel. The root cause is the design limitation of the switch, which has too little operational tolerance. The overtravel was caused by a lack of understanding of the design limitations of the switch. The switch is a three position switch which is normally in the normal (middle) position. The switch can be moved to a left or right position to transfer either RPS bus to the alternate power source. The switch uses a break-before-make contact arrangement, thus when the switch is moved, the existing power supply circuit is broken before the new power supply circuit is made. The design limitation is that any movement past the middle switch position can break the other RPS circuit contacts, causing a loss of RPS power to both buses. Because of this break-before-make design, operators are sensitive to the need to transfer power quickly and in doing so, can cause the switch to overtravel.

The RPS power supply transfer switch is manufactured by General Electric, Model Number SBM.

B. Further Corrective Action

A Technical Evaluation Request was initiated to evaluate options for a more reliable power transfer scheme.

A caution tag was placed on the switch to serve as a reminder that the switch is not mechanically prevented from overtraveling the desired postion and that overtravel could cause a full RPS actuation.

LER 88-030-00 was read by all licensed personnel on the Operations Staff.

As part of requalification training, LER 88-030-00 was reviewed with all operations staff. In conjunction with this review, direction was provided on proper RPS power supply select switch operation.

Safety Significance

There is no safety significance associated with these RPS actuations since there was no actual initiating event. All safety actuations occurred as designed. The RHR Shutdown Cooling System was restored within 10 minutes following both events. The Technical Specification requirements for restoring Shutdown Cooling while in a Cold Shutdown condition is 1 hour. Accordingly, this event posed no threat to the health and safety of the public or Plant personnel.

Similar Events

LER 87-20 - A failure of the same switch described in LER 87-20 is different from the overtravel of the switch in this event. In the LER 87-20 event, the stop tab on the switch was physcially broken and did not prevent the switch from overtravelling when moved to an alternate power supply position. In this event the switch functioned as designed and there were no component failures.

*U.S. GPO: 1988-520-589 00070

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	
Washington Nuclear Plant - Unit 2	0 5 0 0 0 3 9 7	8 8	0 3 0	0 1	0 5 OF 0 5

TEXT *(If more space is required, use additional NRC Form 366A's)* (17)

EIIS Information

Text Reference	EIIS Reference	
	System	Component
Reactor Protection System (RPS)	JC	- - - - -
RPS Electrical Protection Assembly (EPA)	JC	BKR
RPS-Bus-A and B	JC	BU
RPS Power Supply Select Switch	JC	JS
Nuclear Steam Supply Shutoff System (NS^4)	BD	- - - - -
Reactor Water Sample Valves	AD	V
Miscellaneous Balance of Plant (BOP)	BD	- - - - -
RHR and Traversing Incore Probe (TIP) System	IG	- - - - -
RHR Shutdown Cooling System	BD	- - - - -
Reactor Water Cleanup (RWCU) System	CE	- - - - -
Reactor Building Exhaust Plenum Process Radiation System	IL	- - - - -
Standby Gas Treatment System (SGT)	BH	- - - - -
Control Room Emergency Filtration System	VH	- - - - -
Reactor Building Ventilation System	VA	- - - - -
Main Steamline Isolation and Drainline Valves (MSIVs)	SB	ISV/V

ACCELERATED DISTRIBUTION DEMONSTRATION SYSTEM

REGULATORY INFORMATION DISTRIBUTION SYSTEM (RIDS)

ACCESSION NBR:8905040189 DOC.DATE: 89/04/26 NOTARIZED: NO DOCKET #
FACIL:50-397 WPPSS Nuclear Project, Unit 2, Washington Public Powe 05000397
AUTH.NAME AUTHOR AFFILIATION
WASHINGTON,S.L. Washington Public Power Supply System
POWERS,C.M. Washington Public Power Supply System
RECIP.NAME RECIPIENT AFFILIATION

SUBJECT: LER 88-030-00:on 880825,RPS actuations caused by loss of power on both RPS divs due to misapplication of switch type. W/8 ltr.

DISTRIBUTION CODE: IE22D COPIES RECEIVED:LTR 1 ENCL 1 SIZE: 6
TITLE: 50.73/50.9 Licensee Event Report (LER), Incident Rpt, etc.

NOTES:

	RECIPIENT ID CODE/NAME	COPIES LTTR	COPIES ENCL	RECIPIENT ID CODE/NAME	COPIES LTTR	COPIES ENCL
	PD5 LA	1	1	PD5 PD	1	1
	SAMWORTH,R	1	1			
INTERNAL:	ACRS MICHELSON	1	1	ACRS MOELLER	2	2
	ACRS WYLIE	1	1	AEOD/DOA	1	1
	AEOD/DSP/TPAB	1	1	AEOD/ROAB/DSP	2	2
	DEDRO	1	1	IRM/DCTS/DAB	1	1
	NRR/DEST/ADE 8H	1	1	NRR/DEST/ADS 7E	1	0
	NRR/DEST/CEB 8H	1	1	NRR/DEST/ESB 8D	1	1
	NRR/DEST/ICSB 7	1	1	NRR/DEST/MEB 9H	1	1
	NRR/DEST/MTB 9H	1	1	NRR/DEST/PSB 8D	1	1
	NRR/DEST/RSB 8E	1	1	NRR/DEST/SGB 8D	1	1
	NRR/DLPQ/HFB 10	1	1	NRR/DLPQ/QAB 10	1	1
	NRR/DOEA/EAB 11	1	1	NRR/DREP/RPB 10	2	2
	~~NRR/DRIS/SIB 9A~~	1	1	NUDOCS-ABSTRACT	1	1
	REG FILE 02	1	1	RES/DSIR/EIB	1	1
	RES/DSR/PRAB	1	1	RGN5 FILE 01	1	1
EXTERNAL:	EG&G WILLIAMS,S	4	4	FORD BLDG HOY,A	1	1
	L ST LOBBY WARD	1	1	LPDR	1	1
	NRC PDR	1	1	NSIC MAYS,G	1	1
	NSIC MURPHY,G.A	1	1			

NOTE TO ALL "RIDS" RECIPIENTS:

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TOTAL NUMBER OF COPIES REQUIRED: LTTR 44 ENCL 43

RIDS/A DDS

RIDS/A DDS

A10 4

NRC Form 366
(9-83)

U.S. NUCLEAR REGULATORY COMMISSION
APPROVED OMB NO. 3150-0104
EXPIRES: 8/31/88

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 0 5

TITLE (4) RPS Actuations Caused By Loss Of Power On Both RPS Divisions - Due To Mis-Application Of Switch Type

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 NUMBER(S)
										0 5 0 0 0
0 8	2 5	8 8	8 8	— 0 3 0	— 0 1	0 4	2 6	8 9		0 5 0 0 0

OPERATING MODE (9)	4
POWER LEVEL (10)	0 0 0

THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following) (11)

20.402(b)	20.405(c)	X 50.73(a)(2)(iv)	73.71(b)
20.406(a)(1)(i)	50.36(c)(1)	50.73(a)(2)(v)	73.71(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
	AREA CODE
S.L. Washington, Compliance Engineer	5 0 9 — 3 7 7 - 2 0 8 0

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

CAUSE	SYSTEM	COMPONENT	MANUFAC-TURER	REPORTABLE TO NPRDS		CAUSE	SYSTEM	COMPONENT	MANUFAC-TURER	REPORTABLE TO NPRDS	

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

ABSTRACT (Limit to 1400 spaces, i.e., approximately fifteen single space typewritten lines) (16)

This supplemental report changes the reportability status of the August 26, 1988 event from not reportable per 10CFR50.73 to reportable.

On August 25, 1988 at 2211 hours and again on August 26, 1988 at 1553 hours, a full Reactor Protection System (RPS) actuation occurred. Both events occurred during performance of a channel functional test and calibration of the RPS Bus Electrical Protection Assembly (EPA) breakers. The cause of these events is switch overtravel, which simultaneously deenergized both divisions of RPS.

The loss of both divisions of RPS power also causes the isolation of Nuclear Steam Supply Shutoff System (NS^4) Groups 1,2,4 (partial only), 5,6 and 7. All NS^4 isolation valves either actuated as designed or were closed prior to the NS^4 trip. The outboard mainsteam line isolation valves were closed prior to both events. Both Residual Heat Removal Shutdown Cooling Loop B and Reactor Water Cleanup System valves were isolated just prior to each event in anticipation of the momentary loss of power of an RPS Bus which would, by design, isolate the outboard and/or inboard containment isolation valves for these systems.

Plant Operators responded to both events by returning the RPS power supply select switch to the normal position and resetting the scram. For both events, RHR Shutdown Cooling Loop B was returned to operation within 10 minutes and the RWCU System was placed back in service within 12 minutes.

NRC Form 366
(9 83)

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	
Washington Nuclear Plant - Unit 2	0 5 0 0 0 3 9 7	8 8	— 0 3 0	— 0 1	0 2 OF 0 5

TEXT *(If more space is required, use additional NRC Form 366A's)* (17)

Abstract (cont'd)

The root cause of these events is the design limitations of the power transfer switch. The switch is a break-before-make configuration and is subject to overtravel during manipulation.

An engineering analysis will be performed to evaluate options for a more reliable power transfer scheme. Additionally, a caution tag was placed on the switch to serve as a reminder that the switch is not mechanically prevented from overtraveling the desired position.

There is no safety significance associated with these RPS actuations since there was no actual initiating event. All safety actuations occurred as designed. This event posed no threat to the health and safety of the public or Plant personnel.

Plant Conditions

Power Level - 0%
PLant Mode - 4 (Cold Shutdown)

Event Description

This supplemental report changes the August 26, 1988 RPS actuation from not reportable per the requirements of 10CFR50.73 to reportable. The change in reportability status is a corrective action in our response to Notice of Violation "B" Inspection Report 88-24.

On August 25, 1988, at 2211 hours, while performing a channel functional test and calibration of the Reactor Protection System (RPS) Bus "A" Electrical Protection Assembly (EPA) breakers, a full RPS actuation occurred due to a momentary loss of power to both divisions of RPS. At the time of the event, a Plant Operator was transferring RPS "A" power from its alternate to normal power supply as called for in the procedure. During the transfer the RPS Power Supply Select switch overtraveled, deenergizing both RPS Bus "B" and "A".

On August 26, at 1553 hours, a second identical event occurred while performing a channel functional test and calibration of the RPS Bus "B" EPA breakers. The full RPS actuation occurred due to the momentary loss of power to both divisions of RPS. Because of the RPS actuation on the previous day, it was discussed and recognized that transferring from the alternate to normal power supply could cause a full RPS actuation. Management direction was given to proceed with the power supply transfer to help in understanding the event of the previous day.

The loss of both divisions of RPS power causes the isolation of Nuclear Steam Supply Shutoff System Groups 1,2,4 (partial only), 5,6, and 7. For these events the following actuations occurred:

NS[4] Group 1 - Main Steamline Isolation and Drainline Valves (MSIVs). For the August 25, 1988 event, the inboard (MSIVs) isolated. The inboard (MSIVs) remained closed after the August 25, 1988 event and were closed at the time of the August 26, 1988 event. The outboard MSIVs were closed prior to both events. All drainline valves were closed prior to both events.

NS4 Group 2 - Reactor Water Sample Valves. These valves were closed prior to both events.

NS4 Group 4 - Miscellaneous Balance of Plant (BOP). Only four valves in this group (floor drain and equipment drain valves) are controlled by RPS power. These valves isolated during both events.

Group 5 - RHR and Traversing Incore Probe (TIP). All valves in this group were closed prior to both events.

Group 6 - RHR - Shutdown Cooling System. Prior to both events, as noted in the discussion above, the operating RHR "B" Loop was isolated in anticipation of the momentary loss of an RPS Bus which would isolate the outboard and/or inboard valves in this group. As a result, all valves in this group were closed prior to both events.

Group 7 - RWCU System. Again, prior to both events, in anticipation of the outboard and/or inboard isolation valve closing due to the momentary loss of an RPS Bus during the power supply transfer, all valves in this group were closed prior to both events.

In addition, the design of the RPS power supply is such that if either RPS power bus loses power for an extended period of time, the trip relays of the Reactor Building Exhaust Plenum Process Radiation Monitors ("Z" Signal) will deenergize (A Non-Engineered Safety Feature Trip) in the affected RPS division. During a normal RPS power transfer and for both of these events, the trip relays were unaffected due to the capacitance inherent in the power supplies of the Process Radiation Monitor circuitry.

Immediate Corrective Action

Plant Operators responded to the August 25, 1988 event by returning the RPS transfer switch to normal and resetting the scram. RHR Shutdown Cooling Loop B was returned to operation at 2220 hours. The RWCU system was back in service at 2223 hours. All NS4 isolations were reset and returned to their pre-event lineup, with the exception of the inboard MSIVs which were left closed.

Plant Operators responded to the August 26, 1988 event by placing the RPS transfer switch to normal and resetting the scram. RHR Shutdown Cooling Loop B was restored to operation at 1601 hours. The RWCU system was back in service at 1603 hours. All other NS4 isolations were reset and returned to their pre-event lineup.

Further Evaluation and Corrective Action

A. Further Evaluation

These events are reportable per 10CFR50.73(a)(2)(iv) an Engineered Safety Feature Actuation. This supplemental report is submitted to change the reportability of the second RPS actuation.

There were no structures, systems, or components inoperable prior to this event which contributed to the event.

The cause of both of these events is RPS power supply transfer switch overtravel. The root cause is the design limitation of the switch, which has too little operational tolerance. The overtravel was caused by a lack of understanding of the design limitations of the switch. The switch is a three position switch which is normally in the normal (middle) position. The switch can be moved to a left or right position to transfer either RPS bus to the alternate power source. The switch uses a break-before-make contact arrangement, thus when the switch is moved, the existing power supply circuit is broken before the new power supply circuit is made. The design limitation is that any movement past the middle switch position can break the other RPS circuit contacts, causing a loss of RPS power to both buses. Because of this break-before-make design, operators are sensitive to the need to transfer power quickly and in doing so, can cause the switch to overtravel.

The RPS power supply transfer switch is manufactured by General Electric, Model Number SBM.

B. Further Corrective Action

A Technical Evaluation Request was initiated to evaluate options for a more reliable power transfer scheme.

A caution tag was placed on the switch to serve as a reminder that the switch is not mechanically prevented from overtraveling the desired postion and that overtravel could cause a full RPS actuation.

LER 88-030-00 was read by all licensed personnel on the Operations Staff.

As part of requalification training, LER 88-030-00 was reviewed with all operations staff. In conjunction with this review, direction was provided on proper RPS power supply select switch operation.

Safety Significance

There is no safety significance associated with these RPS actuations since there was no actual initiating event. All safety actuations occurred as designed. The RHR Shutdown Cooling System was restored within 10 minutes following both events. The Technical Specification requirements for restoring Shutdown Cooling while in a Cold Shutdown condition is 1 hour. Accordingly, this event posed no threat to the health and safety of the public or Plant personnel.

Similar Events

LER 87-20 - A failure of the same switch described in LER 87-20 is different from the overtravel of the switch in this event. In the LER 87-20 event, the stop tab on the switch was physcially broken and did not prevent the switch from overtravelling when moved to an alternate power supply position. In this event the switch functioned as designed and there were no component failures.

*U.S. GPO: 1988-520-589-00070

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	
Washington Nuclear Plant - Unit 2	0 5 0 0 0 3 9 7	8 8	— 0 3 0	— 0 1	0 5 OF 0 5

TEXT *(If more space is required, use additional NRC Form 366A's)* (17)

EIIS Information

Text Reference	EIIS Reference	
	System	Component
Reactor Protection System (RPS)	JC	- - - - -
RPS Electrical Protection Assembly (EPA)	JC	BKR
RPS-Bus-A and B	JC	BU
RPS Power Supply Select Switch	JC	JS
Nuclear Steam Supply Shutoff System (NS4)	BD	- - - - -
Reactor Water Sample Valves	AD	V
Miscellaneous Balance of Plant (BOP)	BD	- - - - -
RHR and Traversing Incore Probe (TIP) System	IG	- - - - -
RHR Shutdown Cooling System	BD	- - - - -
Reactor Water Cleanup (RWCU) System	CE	- - - - -
Reactor Building Exhaust Plenum Process Radiation System	IL	- - - - -
Standby Gas Treatment System (SGT)	BH	- - - - -
Control Room Emergency Filtration System	VH	- - - - -
Reactor Building Ventilation System	VA	- - - - -
Main Steamline Isolation and Drainline Valves (MSIVs)	SB	ISV/V

WASHINGTON PUBLIC POWER SUPPLY SYSTEM

P.O. Box 968 • 3000 George Washington Way • Richland, Washington 99352

Docket No. 50-397

April 26, 1989

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

Subject: NUCLEAR PLANT NO. 2
LICENSEE EVENT REPORT NO. 88-030-01

Dear Sir:

Transmitted herewith is Licensee Event Report No. 88-030-01 for the WNP-2 Plant. This report is submitted in response to a commitment made by the Supply System in our response to Notice of Violation "B" in Inspection Report 88-24. The commitment is to change the August 26, 1988 event from not reportable to reportable per the requirements of 10CFR50.73. The report discusses the items of reportability, corrective action taken, and action taken to preclude recurrence.

Very truly yours,

C M Powers

C.M. Powers (M/D 927M)
WNP-2 Plant Manager

CMP:lc

Enclosure:
Licensee Event Report No. 88-030-01

cc: Mr. John B. Martin, NRC - Region V
Mr. C.J. Bosted, NRC Site (M/D 901A)
INPO Records Center - Atlanta, GA
Ms. Dottie Sherman, ANI
Mr. D.L. Williams, BPA (M/D 399)

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