



Serial: RNP-RA/10-0052

JUN 24 2010

Attn: Document Control Desk  
United States Nuclear Regulatory Commission  
Washington, DC 20555-0001

H. B. ROBINSON STEAM ELECTRIC PLANT, UNIT NO. 2  
DOCKET NO. 50-261/LICENSE NO. DPR-23

LICENSEE EVENT REPORT NO. 2010-004-00  
CLEARANCE ERROR RESULTS IN THE 'A'  
EMERGENCY DIESEL GENERATOR BECOMING INOPERABLE

Ladies and Gentlemen:

The attached Licensee Event Report is submitted in accordance with the requirements of 10 CFR 50.73. Should you have any questions regarding this matter, please contact Mr. C. A. Castell at (843) 857-1626.

Sincerely,

A handwritten signature in black ink that reads "W Scott Saunders".

W. Scott Saunders  
Plant General Manager  
H. B. Robinson Steam Electric Plant, Unit No. 2

WSS/ahv

Attachment

c: L. A. Reyes, NRC, Region II  
T. J. Orf, NRC, NRR  
NRC Resident Inspector

Progress Energy Carolinas, Inc.  
Robinson Nuclear Plant  
3581 West Entrance Road  
Hartsville, SC 29550

Handwritten initials "JEO" above the letters "NRC".

# LICENSEE EVENT REPORT (LER)

(See reverse for required number of digits/characters for each block)

Estimated burden per response to comply with this mandatory collection request: 80 hours. Reported lessons learned are incorporated into the licensing process and fed back to industry. Send comments regarding burden estimate to the Records and FOIA/Privacy Service Branch (T-5 F52), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by internet e-mail to [infocollects@nrc.gov](mailto:infocollects@nrc.gov), and to the Desk Officer, Office of Information and Regulatory Affairs, NEOB-10202, (3150-0104), Office of Management and Budget, Washington, DC 20503. If a means used to impose an information collection does not display a currently valid OMB control number, the NRC may not conduct or sponsor, and a person is not required to respond to, the information collection.

<b>1. FACILITY NAME</b> H. B. Robinson Steam Electric Plant, Unit No. 2	<b>2. DOCKET NUMBER</b> 05000261	<b>3. PAGE</b> 1 OF 4
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**4. TITLE**  
Clearance Error Results in the 'A' Emergency Diesel Generator Becoming Inoperable

5. EVENT DATE			6. LER NUMBER			7. REPORT DATE			8. OTHER FACILITIES INVOLVED	
MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REV NO	MONTH	DAY	YEAR	FACILITY NAME	DOCKET NUMBER
04	26	2010	2010	004	00	06	24	2010		05000
									FACILITY NAME	DOCKET NUMBER
										05000

<b>9. OPERATING MODE</b>  6	<b>11. THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §:</b> (Check all that apply)									
	<input type="checkbox"/> 20.2201(b)	<input type="checkbox"/> 20.2203(a)(3)(i)	<input type="checkbox"/> 50.73(a)(2)(i)(C)	<input type="checkbox"/> 50.73(a)(2)(vii)						
<b>10. POWER LEVEL</b>  0%	<input type="checkbox"/> 20.2201(d)	<input type="checkbox"/> 20.2203(a)(3)(ii)	<input type="checkbox"/> 50.73(a)(2)(ii)(A)	<input type="checkbox"/> 50.73(a)(2)(viii)(A)						
	<input type="checkbox"/> 20.2203(a)(1)	<input type="checkbox"/> 20.2203(a)(4)	<input type="checkbox"/> 50.73(a)(2)(ii)(B)	<input type="checkbox"/> 50.73(a)(2)(viii)(B)						
	<input type="checkbox"/> 20.2203(a)(2)(i)	<input type="checkbox"/> 50.36(c)(1)(i)(A)	<input type="checkbox"/> 50.73(a)(2)(iii)	<input type="checkbox"/> 50.73(a)(2)(ix)(A)						
	<input type="checkbox"/> 20.2203(a)(2)(ii)	<input type="checkbox"/> 50.36(c)(1)(ii)(A)	<input type="checkbox"/> 50.73(a)(2)(iv)(A)	<input type="checkbox"/> 50.73(a)(2)(x)						
	<input type="checkbox"/> 20.2203(a)(2)(iii)	<input type="checkbox"/> 50.36(c)(2)	<input type="checkbox"/> 50.73(a)(2)(v)(A)	<input type="checkbox"/> 73.71(a)(4)						
	<input type="checkbox"/> 20.2203(a)(2)(iv)	<input type="checkbox"/> 50.46(a)(3)(ii)	<input type="checkbox"/> 50.73(a)(2)(v)(B)	<input type="checkbox"/> 73.71(a)(5)						
<input type="checkbox"/> 20.2203(a)(2)(v)	<input type="checkbox"/> 50.73(a)(2)(i)(A)	<input type="checkbox"/> 50.73(a)(2)(v)(C)	<input type="checkbox"/> OTHER							
<input type="checkbox"/> 20.2203(a)(2)(vi)	<input checked="" type="checkbox"/> 50.73(a)(2)(i)(B)	<input checked="" type="checkbox"/> 50.73(a)(2)(v)(D)	Specify in Abstract below or in NRC Form 366A							

**12. LICENSEE CONTACT FOR THIS LER**

<b>FACILITY NAME</b> Ashley Valone	<b>TELEPHONE NUMBER (Include Area Code)</b> 843-857-1256
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**13. COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT**

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO EPIX	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO EPIX

<b>14. SUPPLEMENTAL REPORT EXPECTED</b>			<b>15. EXPECTED SUBMISSION DATE</b>		
<input type="checkbox"/> YES (If yes, complete 15. EXPECTED SUBMISSION DATE)	<input checked="" type="checkbox"/> NO				

**ABSTRACT** (Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines)  
On April 26, 2010, with H. B. Robinson, Unit No. 2, shutdown in Mode 6 during Refueling Outage 26, it was determined that a condition existed that could have prevented the fulfillment of the safety function needed to mitigate the consequences of an accident.

From April 18 to April 26, 2010, an equipment clearance inadvertently made Emergency Diesel Generator (EDG) 'A' inoperable. During this time period, on April 24, 2010, EDG 'B' was taken out of service for required surveillance testing in accordance with OST-401-2, "EDG B Slow Speed Start." Technical Specification (TS) 3.8.2 requires one diesel generator capable of supplying one train of the onsite AC electric power distribution subsystem(s) when in Mode 6. TS 3.8.2, Condition B, states if one required EDG is inoperable initiate actions to restore an EDG to operable status immediately. The condition where EDG 'B' was out of service for surveillance testing while EDG 'A' was inadvertently inoperable resulted in a failure to meet the required action associated with TS Action Statement 3.8.2.B.4.

The root cause of this event was determined to be insufficient procedural guidance. Guidance was not available to provide a risk assessment or an additional supervisory review of a clearance following the completion of the pre-outage clearance window. The planned corrective action to prevent recurrence is to revise a procedure to include requirements for additional reviews for clearances.

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**NARRATIVE**

**I. DESCRIPTION OF EVENT**

On April 26, 2010, with H. B. Robinson, Unit No. 2, shutdown in Mode 6 during Refueling Outage 26 (RO-26), it was determined that a condition existed that could have prevented the fulfillment of the safety function needed to mitigate the consequences of an accident.

From April 18 to April 26, 2010, an equipment clearance had inadvertently rendered Emergency Diesel Generator (EDG) 'A' [EK] inoperable by removing power from the 'A' Train Blackout Sequencer [EK:2]. During this time period, on April 24, 2010, EDG 'B' was taken out of service at 1343 hours for required surveillance testing in accordance with OST-401-2, "EDG B Slow Speed Start." Technical Specification (TS) 3.8.2 requires one diesel generator capable of supplying one train of the on-site AC electric power distribution subsystem(s) when in Mode 6. TS 3.8.2, Condition B, states that if one required EDG is inoperable initiate action to restore an EDG to operable status immediately. The condition where EDG 'B' was out of service for surveillance testing while EDG 'A' was inadvertently inoperable resulted in a failure to meet the required action associated with TS Action Statement 3.8.2.B.4.

This condition is reportable under 10 CFR 50.73(a)(2)(i)(B), "Any operation or condition which was prohibited by the plant's Technical Specifications." In addition, the combined inoperability of EDG 'A' and 'B' for approximately 3 hours and 22 minutes, is a condition which could have prevented the fulfillment of a safety function and is reportable under 10 CFR 50.73(a)(2)(v)(D), "Any event or condition that could have prevented the fulfillment of the safety function of structures or systems that are needed to mitigate the consequences of an accident."

**II. CAUSE OF EVENT**

The cause of the event was determined to be insufficient procedural guidance. Guidance was not available to provide a risk assessment or an additional supervisory review of a clearance following the completion of the pre-outage clearance window. Additional weaknesses were identified in operator knowledge in the areas of; control wiring diagrams, EDG Blackout Sequencer, and Technical Specifications.

**III. ANALYSIS OF EVENT**

The conditions described in this Licensee Event Report are reportable in accordance with 10 CFR 50.73(a)(2)(i)(B), "Any operation or condition which was prohibited by plant's Technical Specifications," and 10 CFR 50.73(a)(2)(v)(D), "Any event or condition that could have prevented the fulfillment of the safety function of structures or systems that are needed to mitigate the consequences of an accident."

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**NARRATIVE**

This event was investigated in accordance with the HBRSEP, Unit No. 2, Corrective Action Program (CAP) and documented in Significant Adverse Nuclear Condition Report 395800. This reportable event and the associated significant adverse condition investigation was reviewed by the Plant Nuclear Safety Committee on June 8, 2010. The investigation for the inoperability of EDG 'A' due to the clearance error identified that insufficient procedure guidance was the cause.

Updated Final Safety Analysis Report, Section 8.3.1.1.5.3, provides the description of the expected plant response to a loss of power and the blackout load sequence. The automatic sequence upon undervoltage on an emergency bus is described as follows:

1. All motor feeder breakers, the main supply and the tie breakers which are on the affected bus are tripped, except Motor Control Center (MCC)-5 and MCC-16
2. The diesel generator is started
3. After the unit comes up to voltage, the emergency generator breaker is automatically closed and the electrically driven auxiliary feedwater, service water, and component cooling water pumps connected to the bus automatically start (the automatic starting of these loads via the blackout loading sequencer was inoperable due to the clearance error)
4. Other auxiliaries are manually started as required for safe plant operation.

In this event, EDG 'A' was capable of automatically starting and providing power to the associated bus. The automatic loading of the blackout sequence loads was inoperable. Therefore, manual operation of the required loads would have been required if a loss of power had occurred. The service water pumps are needed to maintain cooling water flow to the EDG.

The investigation determined that EDG 'A' was considered available during the period from April 18 to April 26, 2010. Operator action would have been required to restore service water via the control room in accordance with procedure, AOP-020, "Loss of Residual Heat Removal." AOP-020 is a direct entry procedure for a loss of Residual Heat Removal and includes steps to restore service water. A validation of operator actions was conducted with two Nuclear Shift Managers. The operators validated the procedural guidance based on conditions similar to the event and it was concluded that it would take approximately 25 minutes to restore the required components that would normally be started via the 'A' Train Blackout Sequencer. The EDG can operate without service water under station blackout loads for approximately 40 minutes.

An extent of condition was performed as part of the investigation. No conditions were identified during RO-23, RO-24, and RO-25 where control power was removed from the blackout sequencer while the EDG was required for operability.

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**NARRATIVE**

**IV. CORRECTIVE ACTIONS**

Completed Corrective Actions:

- At the time of discovery, EDG 'A' was declared inoperable and actions were taken to remove the clearance to restore EDG 'A' to operable status. EDG 'A' was restored to operable status at 1743 hours on April 26, 2010.
- Active clearances were reviewed and evaluated independently for impact to component operability and a standing instruction was provided on clearance preparation and review.
- Procedure, OWP-015, "Reactor Protection and Safeguards," was revised to include information on the relevant Technical Specifications associated with emergency diesel generators.
- Procedure, APP-002, "Engineering Safeguards," was revised to include information on the relevant Technical Specifications associated with emergency diesel generators.

Planned Corrective Action:

- Procedure, OMM-001-18, "Outages," is scheduled to be revised by June 29, 2010, to include requirements for additional reviews for clearances developed following completion of the clearance development window.
- Additional operator training on control wiring diagrams and Technical Specifications is scheduled for completion by August 10, 2010.

**V. ADDITIONAL INFORMATION**

Previous Similar Events:

Licensee Event Reports (LERs) for HBRSEP, Unit No. 2, were reviewed from the past 10 years. There were no similar events identified.