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SUBJECT: Application for amend to license DPR-23,consisting of new section to provide necessary criteria to perform 24 h full-load testing of EDGs.

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**Carolina Power & Light Company**

Robinson Nuclear Plant
3581 West Entrance Road
Hartsville SC 29550

RNP File No: 13510HA
Serial: RNP-RA/96-0005

JAN 30 1996

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

H. B. ROBINSON STEAM ELECTRIC PLANT, UNIT NO. 2
DOCKET NO. 50-261/LICENSE NO. DPR-23
REQUEST FOR TECHNICAL SPECIFICATIONS CHANGE
EMERGENCY POWER SYSTEM PERIODIC TESTS

Gentlemen:

In accordance with 10 CFR 50.90, we are submitting a request for a change to the Technical Specifications (TS) for the H. B. Robinson Steam Electric Plant (HBRSEP), Unit No. 2.

The proposed change to TS Section 4.6.1, consists of three separate parts. The first part of the change consists of the addition of a new section (i.e., TS Section 4.6.1.5) to provide the necessary criteria to perform 24 hour full-load testing of the Emergency Diesel Generators (EDGs). The second part consists of a revision to TS Section 4.6.1.2 which currently requires the "Trips Defeat" logic be tested during the Safety Injection/Loss Of Offsite Power (SI/LOOP) testing. This change will require testing of the "Trips Defeat" logic on a refueling interval. The third part consists of a revision to TS Section 4.6.1.3 which currently requires the EDGs be inspected at each refueling. This change will require the inspection to be performed during each refueling interval.

The proposed change to add the new TS Section 4.6.1.5 is in response to an Inspector Follow-up Item identified in NRC Inspection Report 50-261/95-08.

Enclosure 1 provides an affidavit as required by 10 CFR 50.30(b).

Enclosure 2 provides a detailed description of the proposed changes and the basis for the changes.

Enclosure 3 details, in accordance with 10 CFR 50.91(a), the basis for our conclusion that the proposed changes do not involve a significant hazards consideration.

Enclosure 4 provides an environmental evaluation which demonstrates that the proposed

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changes meet the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Therefore, pursuant to 10 CFR 51.22(b), no environmental assessment needs to be prepared in connection with the issuance of the proposed changes to the TS.

Enclosure 5 provides page change instructions for incorporating the proposed changes.

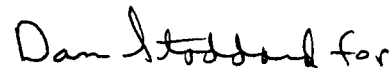
Enclosure 6 provides the proposed TS pages.

In accordance with 10 CFR 50.91(b), we are providing the State of South Carolina with a copy of the proposed changes to the TS.

Approval of this request is needed to support Refueling Outage 17, currently scheduled to begin in September 1996. Accordingly, we request that the NRC approve this request by July 1996. In order to allow time for procedure revision and orderly incorporation into copies of the TS, we request that the proposed changes, once approved by the NRC, be issued such that implementation will occur within 60 days of issuance of the amendment.

Please refer any questions regarding this submittal to me at (803) 857-1802.

Very truly yours,



R. M. Krich
Manager - Regulatory Affairs

JSK/klb

Enclosures:

1. Affidavit
2. Basis for Change Request
3. 10 CFR 50.92 Evaluation
4. Environmental Considerations
5. Page Change Instructions
6. Technical Specifications Pages

c: Mr. Max K. Batavia, Chief, Bureau of Radiological Health (SC)
Mr. S. D. Ebnetter, Regional Administrator, USNRC, Region II
Ms. B. L. Mozafari, USNRC Project Manager, HBRSEP
Mr. W. T. Orders, USNRC Senior Resident Inspector, HBRSEP
Attorney General (SC)

Affidavit

State of South Carolina
County of Darlington

C. S. Hinnant, having been first duly sworn, did depose and say that the information contained in letter 96-0005 is true and correct to the best of his information, knowledge and belief; and the sources of his information are officers, employees, contractors, and agents of Carolina Power & Light Company.

C. S. Hinnant

Sworn to and subscribed before me

this 30th day of JANUARY 19 96

(Seal)

David C. Cade
Notary Public for South Carolina

My commission expires: MARCH 21, 2005

H. B. ROBINSON STEAM ELECTRIC PLANT, UNIT NO. 2
NRC DOCKET NO. 50-261/LICENSE NO. DPR-23
REQUEST FOR TECHNICAL SPECIFICATIONS CHANGE
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BASIS FOR CHANGE REQUEST

Proposed Change

Each Emergency Diesel Generator (EDG) consists of a 12 cylinder Fairbanks-Morse engine directly coupled to a Fairbanks-Morse 480 VAC generator. The EDGs are designed to start and attain rated speed (i.e., 900 rpm) and voltage within 10 seconds and assume the required loads automatically started during a safeguards actuation within 50 seconds total. Each EDG provides electrical power to an associated emergency bus in the event of a Loss Of Offsite Power (LOOP). Both EDGs will automatically start upon receipt of a safeguards actuation signal.

The current Technical Specifications (TS) regarding the periodic testing and surveillance requirements for the EDGs (i.e., TS Section 4.6.1) include the following criteria:

- 1) Monthly testing (i.e., TS Section 4.6.1.1),
- 2) Refueling outage testing to include Loss of Coolant Accident(LOCA)/LOOP. Testing includes the "Trips Defeat" circuitry (i.e., TS Section 4.6.1.2),
- 3) Refueling outage inspections (i.e., TS Section 4.6.1.3), and
- 4) EDG load limits (i.e., TS Section 4.6.1.4).

The proposed change to TS Section 4.6.1, consists of three separate parts. The first part consists of the addition of a new section (i.e., TS Section 4.6.1.5) to provide the necessary criteria to perform 24 hour full-load testing of the EDGs. The second part consists of a proposed change to TS Section 4.6.1.2 which currently requires the "Trips Defeat" logic be tested during the Safety Injection (SI)/LOOP testing. The third part consists of a proposed change to TS Section 4.6.1.3 which currently requires the EDGs be inspected at each refueling. The following is a synopsis of the changes being proposed.

- 1) The addition of TS Section 4.6.1.5 will provide the necessary testing criteria for 24 hour full-load testing of the EDGs. The testing will be performed during each refueling outage.
- 2) The revision to TS Section 4.6.1.2 will allow the testing of the EDG protective bypasses listed in TS Section 3.7.1.d to be accomplished independent of the SI/LOOP testing. This requirement will be incorporated into TS Section 4.6.1.3.

- 3) The revision to TS Section 4.6.1.3 will require the EDG to be inspected at least once every refueling interval. The inspection will include the diesel engine protective bypasses from TS Section 4.6.1.2.

Basis

Addition of TS Section 4.6.1.5

The proposed change to TS Section 4.6.1 will require 24 hour full-load testing of the EDGs at a refueling interval. Currently, no requirement exists to test the EDGs at full-load for a 24 hour period. Regulatory Guide (RG) 1.9, "Selection, Design, Qualification, and Testing of Emergency Diesel Generator Units Used As Class 1E Onsite Electric Power Systems At Nuclear Power Plants," specifies testing each EDG at full-load for a minimum of 24 hours of which 22 hours shall be at full-load and two hours at the 110 percent of the full-load rating. While we have not committed to RG 1.9, this test will be performed to demonstrate reliability of the EDGs and to ensure the EDGs can withstand accident loading conditions. This TS change will respond to the NRC's Inspector Follow-up Item 50-261/95-08-02. The latest revision of the EDG loading calculation has determined the maximum loading to be 2542 kW for EDG 'A' and 2583 kW for EDG 'B'. The EDG loading calculation has also determined the power factor to be inconsequential with respect to the maximum loading values. A power factor range of 0.8 to 1.0 was used in the analysis to determine the loading effect on the EDGs. We determined that the maximum analyzed load for both EDGs using a power factor range of 0.8 to 1.0 varied less than one kW which is less than 0.1 percent of the maximum analyzed load. Therefore, based on the results of the EDG loading calculation, the proposed change will require the EDGs to be tested for two hours at a range of 2650 to 2750 kW, which encompasses the maximum analyzed load. The remaining 22 hours will be tested at a range of 2400 to 2500 kW which will demonstrate the EDGs' capability to operate at their continuous load rating. A power factor range of 0.8 to 0.9 will be used during the testing since this range should be the normal power factor range of the inductive loads that are powered from the emergency buses. The proposed TS change is within the rating of the EDGs' continuous rating of 2500 kW, with an overload rating of 2750 kW for two hours in a 24 hour period, and therefore, will not affect the ability of the EDG to perform its design function.

Propose Change to TS Section 4.6.1.2

The proposed change to TS Section 4.6.1.2 will move the requirement to test the "Trips Defeat" circuitry to TS Section 4.6.1.3. This will allow the circuitry to be tested at a refueling interval during an EDG outage instead of during the SI/LOOP testing. Presently, SI/LOOP testing is performed to test the ability of the EDGs to automatically start during an SI signal and to automatically start and load during an SI/LOOP signal.

Testing the EDG protective bypasses, shown schematically in the enclosed Figure 1 "Emergency Diesel Generator Protective Bypasses," is also performed during the SI/LOOP test and consists of installing jumpers on the following devices to simulate actuation:

- a) Low Lube Oil Pressure Switch (PS-4500),
- b) Low Coolant Pressure Switch (PS-4509),
- c) High Coolant Temperature Switch (TS-4525),
- d) High Crankcase Pressure Switch (PS-4507), and
- e) Engine Start Failure Relay (TD2).

With the TRIPS DEFEAT switch in the "Trips Defeated" mode, the EDG should not trip when each of the devices listed above are bypassed. However, the EDG control logic and the TRIPS DEFEAT switch is designed such that the protective bypasses do not have to be tested during a refueling outage. The control logic does not have a permissive or interlock requiring the EDG to be in automatic to test these switches. The TRIPS DEFEAT switch is a manual key-lock switch that can be operated at any time. The only requirement to test the devices listed above is to ensure the TRIPS DEFEAT switch is in the "Trips Defeated" mode and DC control power is available. When a jumper is placed across a set of contacts simulating a device actuation, the Shutdown Relay (SDR) should energize but the "Stopping Relay" or "5 Relay" should remain de-energized. A similar test is presently being performed as part of post maintenance testing following calibration of these temperature and pressure switches at an 18 month interval. The only difference between this test and testing during the SI/LOOP test is, since the EDGs are not running, an additional jumper is required across relay TD3 contacts 1/5 which simulates EDG operation.

The proposed change to TS Section 4.6.1.2 will have a significant positive impact with respect to challenging a safety system. The present testing method of the EDG protective bypasses is accomplished while the emergency buses are separated from off-site power and the EDGs are supplying power. If the TRIPS DEFEAT logic failed and the EDG tripped, the associated emergency bus would lose power. The resultant transient could damage or degrade some of the safety related loads being fed from the emergency bus. The proposed revision to the TS Section will allow the protective bypass logic to be statically tested (i.e. with the EDG under clearance). This will prevent electrical transients from occurring if the TRIPS DEFEAT switch were to fail.

The proposed change to TS Section 4.6.1.2 to move the requirement for testing the diesel protective bypasses to TS Section 4.6.1.3 will not affect the ability of the EDGs to mitigate an accident. The requirement to perform this testing at a refueling interval during an EDG outage instead of during the SI/LOOP testing will not affect the ability of the EDGs to perform

their design function, and the risk significance of performing this test with the unit on-line is negligible.

Proposed Change to TS Section 4.6.1.3

The proposed change to TS Section 4.6.1.3 will require inspecting the EDGs at least once every refueling interval instead of at each refueling outage. The proposed change adds the testing of the EDG protective bypasses from TS Section 4.6.1.2 as discussed above. The current wording of the paragraph allows interpretation that "refueling" can also mean "refueling interval." However, revising the paragraph to state at least once every refueling interval would remove any question about the allowance of performing EDG maintenance with the unit on-line. This will also be consistent with the recommendations of Generic Letter 91-04, "Changes In Technical Specifications Surveillance Intervals To Accommodate A 24-Month Fuel Cycle." Since on-line maintenance of the EDGs has already been determined not to impact the AC Power System Probabilistic Safety Assessment (PSA), the revision to TS Section 4.6.1.3 will not impact the ability of the EDGs to mitigate an accident.

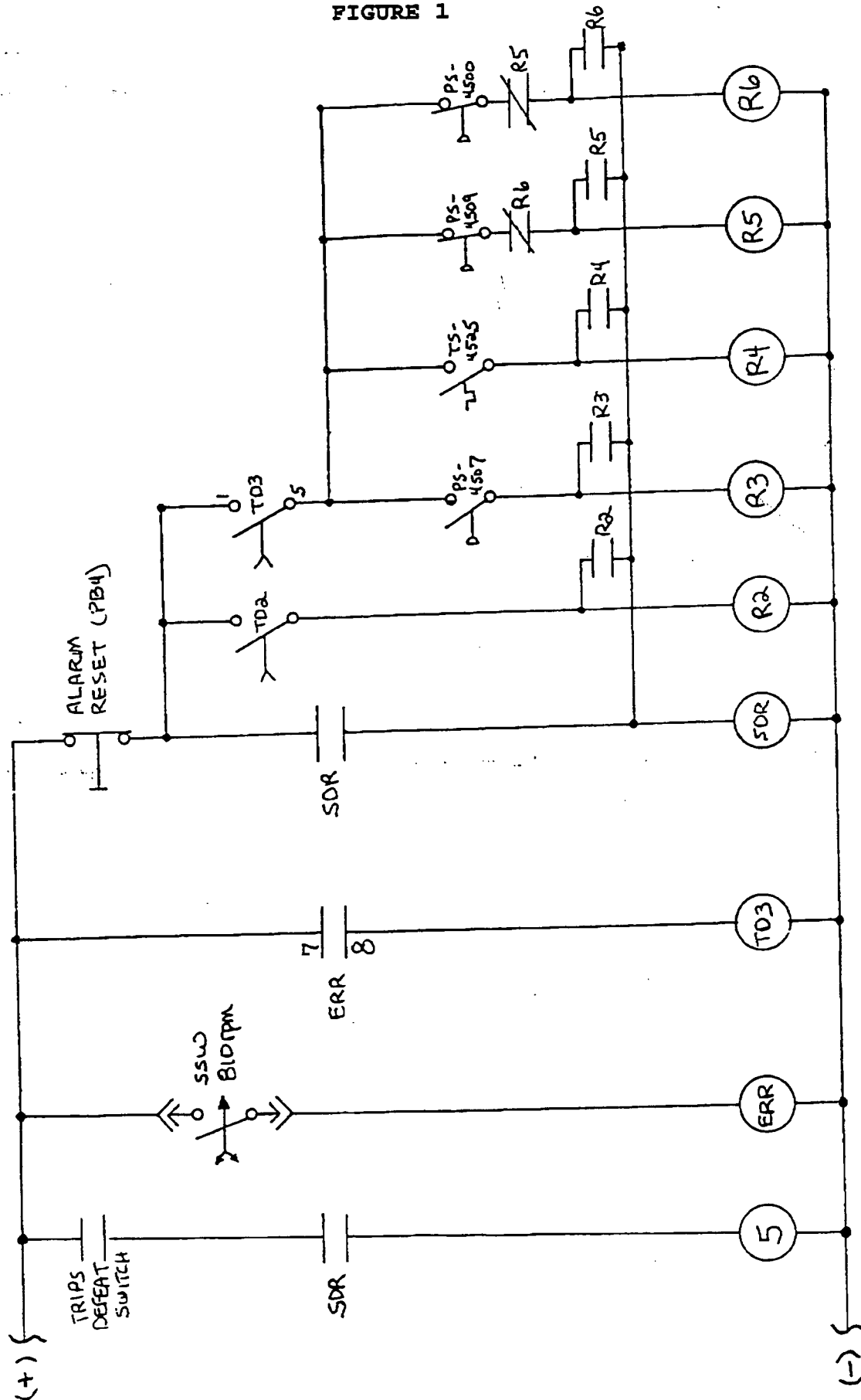
The three proposed changes to TS Section 4.6.1 will not increase the consequences of an accident. The addition of the requirement to perform a 24 hour full-load test demonstrates the ability of the EDGs to operate at the nameplate rating. It also demonstrates that the EDGs can withstand accident loading conditions. The revision to TS Section 4.6.1.2 will not change the requirement to test the diesel protective bypasses or the periodicity of testing. The only change being proposed is to allow the protective bypass logic to be tested while the unit is on-line instead of during the SI/LOOP testing performed during the refueling outage. This requirement will be moved from TS Section 4.6.1.2 to TS Section 4.6.1.3. The remaining proposed change to TS Section 4.6.1.3 is for clarification only and does not change the requirement to inspect the EDGs within an 18 month interval.

Conclusion

The proposed changes result in an acceptable level of safety.

EMERGENCY DIESEL GENERATOR
 PROTECTIVE BYPASSES

FIGURE 1



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10 CFR 50.92 EVALUATION

We have concluded that the proposed change to the H. B. Robinson Steam Electric Plant (HBRSEP), Unit No. 2 Technical Specifications (TS) for testing of the Emergency Diesel Generators does not involve a significant hazards consideration. In support of this determination, an evaluation of each of the three standards set forth in 10 CFR 50.92 is provided below.

Requested Change

The proposed change to Technical Specifications (TS) Section 4.6.1, consists of three separate parts. The first part consists of the addition of a new section (i.e., TS Section 4.6.1.5) to provide the necessary criteria to perform 24 hour full-load testing of the Emergency Diesel Generators (EDGs). The second part consists of a proposed change to TS Section 4.6.1.2 which currently requires the "Trips Defeat" logic be tested during the Safety Injection/Loss Of Offsite Power (SI/LOOP) testing. This change will require testing of the "Trips Defeat" logic on a refueling interval. The third part consists of a proposed change to TS Section 4.6.1.3 which currently requires the EDGs be inspected at each refueling. This change will require the inspection to be performed during each refueling interval.

Basis

The proposed changes do not involve a significant hazards consideration for the following reasons.

1. The proposed changes do not involve a significant increase in the probability or consequences of an accident previously evaluated.

The proposed changes do not involve a significant increase in the probability of an accident previously evaluated. The proposed changes require additional testing of the EDGs and will change the requirement for when the protective bypasses are tested. The function of the EDGs remains unchanged. Since the additional testing involves the EDGs, which are required to mitigate an accident and are not involved in the initiation of an accident, the proposed changes will not increase the probability of an accident.

The proposed changes do not involve a significant increase in the consequences of an accident previously evaluated. The proposed changes require additional testing to verify the reliability of the EDGs and to show the EDGs can withstand maximum accident loading conditions. The

proposed changes will also require the testing of the EDG protective bypasses to be accomplished during EDG outages and not during the SI/LOOP testing during a refueling outage. The ability of the EDGs to perform their accident mitigation function remains unchanged. Therefore, the proposed changes will not increase the consequences of an accident.

2. The proposed changes do not create the possibility of a new or different kind of accident from any accident previously evaluated.

The proposed changes do not create the possibility of a new kind of accident from any previously evaluated. The proposed changes are an enhancement to the EDG testing requirements. The most significant change will require additional testing of the EDGs to demonstrate adequate reliability and to determine if the EDGs can withstand maximum accident loading conditions. The remaining changes will augment the TS to allow on-line EDG inspections and testing. Since the function of the EDGs remains unchanged and they are not the initiator of an accident, the proposed changes will not create the possibility of a new kind of accident from any previously evaluated.

The proposed changes do not create the possibility of a different kind of accident from any accident previously evaluated. The proposed changes require additional testing of the EDGs (i.e., the 24 hour full-load test) and revise the requirement for testing the EDG protective bypasses during the SI/LOOP testing. The additional testing of the EDGs will demonstrate sufficient reliability and determine if the EDGs can withstand maximum accident loading conditions. The EDG protective bypasses will be statically tested during an EDG outage thus preventing possible damage to equipment from a transient if the protective bypass fails. The function of the EDGs remains unchanged by these proposed changes. Since the EDGs are required to mitigate an accident and are not the initiators of an accident, the proposed changes will not create a different kind of accident from any kind of accident previously evaluated.

3. The proposed changes do not involve a significant reduction in the margin of safety.

The proposed changes do not reduce the margin of safety as defined in the TS. The proposed changes are being submitted as an enhancement to the testing requirements outlined in the TS. The changes include additional testing, revising the requirement to test the engine protective bypasses during the SI/LOOP testing and clarification of the periodicity of inspecting the EDGs. The additional testing demonstrates increased reliability and determines that the EDGs can cope with maximum accident loading. The remaining proposed changes provide clarification as to when the EDG inspections and testing are required. The ability of the EDGs to perform their function will not be reduced. Therefore, the margin of safety will not be reduced by the proposed changes.

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Conclusion

Based on the above significant hazards evaluation, we have concluded that the proposed changes do not involve a significant hazards consideration.

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ENVIRONMENTAL CONSIDERATIONS

10 CFR 51.22(c)(9) provides criteria for identification of licensing and regulatory actions eligible for categorical exclusion from performing an environmental assessment. A proposed change to an operating license for a facility requires no environmental assessment if operation of the facility in accordance with the proposed change would not (1) involve a significant hazards consideration; (2) result in a significant change in the types or significant increase in the amounts of any effluents that may be released off-site; (3) result in an increase in individual or cumulative occupational radiation exposure. We have reviewed this request and determined that the proposed changes meet the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment needs to be prepared in connection with the issuance of the amendment. The basis for this determination follows.

Proposed Change

The proposed change to Technical Specifications (TS) Section 4.6.1, consists of three separate parts. The first part consists of the addition of a new section (i.e., TS Section 4.6.1.5) to provide the necessary criteria to perform 24 hour full-load testing of the Emergency Diesel Generators (EDGs). The second part consists of a proposed change to TS Section 4.6.1.2 which currently requires the "Trips Defeat" logic be tested during the Safety Injection/Loss Of Off-Site Power (SI/LOOP) testing. This change will require testing of the "Trips Defeat" logic on a refueling interval and will be moved to Section 4.6.1.3. The third part consists of a proposed change to TS Section 4.6.1.3 which currently requires the EDGs be inspected at each refueling. This change will require the inspection to be performed at least once during each refueling interval.

Basis

The proposed changes meet the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9) for the following reasons.

1. As demonstrated in Enclosure 3, the proposed changes do not involve a significant hazards consideration.

2. The proposed changes do not result in a significant change in the types or significant increase in the amounts of any effluents that may be released off-site.

The operation of the facility in accordance with the proposed changes do not involve a significant change in the types or amount of any effluents that may be released off-site. The proposed change to include additional testing to demonstrate the ability of the EDGs to withstand maximum accident loading will require operating each EDG for at least 24 hours. This will result in additional exhaust from the engines being vented to the atmosphere. The environmental regulatory permits issued to H. B. Robinson Steam Electric Plant (HBRSEP), Unit No. 2 do not require a limit on the amount of fuel oil burned by the EDGs. No other type of effluent will be released by this proposed change. The increased exhaust is insignificant compared to the exhaust that would be generated if the EDGs were required to perform their accident mitigation function.

3. The proposed changes do not result in an increase in individual or cumulative occupational radiation exposure.

The operation of the facility in accordance with the proposed changes do not involve a significant increase in individual or cumulative occupational exposure. The additional testing will result in a negligible increase in dose because the EDGs are in a low dose area. The proposed changes are an enhancement to the testing requirements outlined in the TS. These proposed changes do not change the function of the EDGs nor the ability of the EDGs to mitigate an accident. All previous accident analyses, evaluations and expected responses by the EDGs remain valid.

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PAGE CHANGE INSTRUCTIONS

<u>Removed Page</u>	<u>Inserted Page</u>
4.6-1	4.6-1
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4.6-3	4.6-3
4.6-3a	4.6-3a
4.6-4	4.6-4

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TECHNICAL SPECIFICATIONS PAGES