FENOC
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May 1, 2000
L-00-054

U. S. Nuclear Regulatory Commission
Attention: Document Control Desk
Washington, DC 20555-0001

Subject: Beaver Valley Power Station, Unit No. 1 and No. 2
BV-1 Docket No. 50-334, License No. DPR-66
BV-2 Docket No. 50-412, License No. NPF-73
License Amendment Request Nos. 275 and 150

Pursuant to 10 CFR 50.90, FirstEnergy Nuclear Operating Company requests an amendment to the above licenses in the form of changes to the technical specifications.

The proposed amendment will revise the Unit 1 and 2 Technical Specification (TS) 3/4.6.4.2 titled "Electrical Hydrogen Recombiners." Specifically, Surveillance Requirement 4.6.4.2.b.3 will be modified. The current surveillance requires the hydrogen recombiner performance to be verified at a containment pressure of less than or equal to 13 psia (design basis accident condition). The revised surveillance will permit the hydrogen recombiner performance to be confirmed by measuring the flow under normal or current test conditions (e.g., atmospheric pressure) and calculating the expected system performance under design basis operating conditions. The proposed change will continue to provide an accurate measure of hydrogen recombiner performance and allows the hydrogen recombiner performance to be trended in the same manner as before. The proposed change also provides additional operating flexibility to verify hydrogen recombiner performance over a greater range of containment pressures.

The proposed technical specification changes for Unit No. 1 and Unit No. 2 are presented in Attachments A-1 and A-2, respectively. The safety analysis (including the no significant hazards evaluation) is presented in Attachment B.

This change is requested to be approved prior to the start of refueling outage 2R08 in September 2000.

These changes have been reviewed by the Beaver Valley review committees. The changes were determined to be safe and do not involve a significant hazard consideration as defined in 10 CFR 50.92 based on the attached safety analysis. An implementation period of up to 60 days is requested following the effective date of this amendment.

A001

If there are any questions concerning this matter, please contact Mr. Brian F. Sepelak at 412-393-5282.

Sincerely,

Lew W. Myers

c: Mr. D. S. Collins, Project Manager
Mr. D. M. Kern, Sr. Resident Inspector
Mr. H. J. Miller, NRC Region I Administrator
Mr. D. A. Allard, Director BRP/DEP
Mr. L. E. Ryan (BRP/DEP)
Ms. M. E. O'Reilly (FirstEnergy Legal Department)

I, Marc P. Pearson, being duly sworn, state that I am Director, Plant Services of FirstEnergy Nuclear Operating Company (FENOC), that I am authorized to sign and file this submittal with the Nuclear Regulatory Commission on behalf of FENOC, and that the statements made and the matters set forth herein pertaining to FENOC are true and correct to the best of my knowledge and belief.

FirstEnergy Nuclear Operating Company

Marc P. Pearson
Manager, Plant Services - FENOC

STATE OF PENNSYLVANIA

COUNTY OF BEAVER

Subscribed and sworn to me, a Notary Public, in and for the County and State above named, this 15th day of May, 2000.

My Commission Expires:

Notarial Seal
Tracey A. Baczek, Notary Public
Shippingport Boro, Beaver County
My Commission Expires Aug. 16, 2001
Member, Pennsylvania Association of Notaries

ATTACHMENT A-1

Beaver Valley Power Station, Unit No. 1
License Amendment Request No. 275

The following is a list of the affected pages:

Affected Pages:	3/4 6-21
	B 3/4 6-12

Delete Lines

CONTAINMENT SYSTEMS

ELECTRIC HYDROGEN RECOMBINERS

LIMITING CONDITION FOR OPERATION

3.6.4.2 Two separate and independent containment hydrogen recombiner systems shall be OPERABLE.

APPLICABILITY: MODES 1 and 2.

ACTION:

With one hydrogen recombiner system inoperable, restore the inoperable system to OPERABLE status within 30 days or be in HOT STANDBY within the next 12 hours.

SURVEILLANCE REQUIREMENTS

4.6.4.2 Each hydrogen recombiner system shall be demonstrated OPERABLE:

a. At least once per 6 months by verifying during a recombiner system functional test using outside atmospheric air at a flow rate of ≥ 50 scfm that the heater outlet temperature increases to ≥ 700°F within 90 minutes and is maintained for at least 2 hours.

b. At least once per 18 months by:

1. Performing a CHANNEL CALIBRATION of all recombiner instrumentation and control circuits.

2. Verifying through a visual examination that there is no evidence of abnormal conditions within the recombiners (i.e., loose wiring or structural connections, deposits of foreign materials, etc.).

3. Verifying during a recombiner system functional test using containment atmospheric air at a pressure of ≤ 13 psia and a flow rate of ≥ 50 scfm, that the heater temperature increases to ≥ 1100°F within 5 hours and is maintained for at least 4 hours.

INSERT New SR

Delete Lines

Attachment A-1
Beaver Valley Power Station, Unit No. 1
License Amendment Request No. 275

TS INSERT

Performing a hydrogen recombiner system functional test using containment atmospheric air to verify the following:

a. The recombiner blower flow when corrected to 13 psia and 130°F is ≥ 50 scfm, and

b. The heater temperature increases to ≥ 1100°F within 5 hours and is maintained for at least 4 hours while operating at a recombiner blower flow that when corrected to 13 psia and 130°F is ≥ 50 scfm.

3/4.6.3 CONTAINMENT ISOLATION VALVES

The OPERABILITY of the containment isolation valves ensures that the containment atmosphere will be isolated from the outside environment in the event of a release of radioactive material to the containment atmosphere or pressurization of the containment. Containment isolation within the time limits specified ensures that the release of radioactive material to the environment will be consistent with the assumptions used in the analysis for a LOCA.

The opening of locked or sealed closed containment isolation valves on an intermittent basis under administrative control includes the following considerations: (1) stationing an operator, who is in constant communication with the control room, at the valve controls, (2) instructing this operator to close these valves in an accident situation, and (3) assuring that environmental conditions will not preclude access to close the valves and that this action will prevent the release of radioactivity outside the containment.

3/4.6.4 COMBUSTIBLE GAS CONTROL

The OPERABILITY of the equipment and systems required for the detection and control of hydrogen gas ensures that this equipment will be available to maintain the hydrogen concentration within containment below its flammable limit during post-LOCA conditions. Either recombiner unit is capable of controlling the expected hydrogen generation associated with 1) zirconium-water reactions, 2) radiolytic decomposition of water, and 3) corrosion of metals within containment. These hydrogen control systems are consistent with the recommendations of Regulatory Guide 1.7, "Control of Combustible Gas Concentrations in Containment Following a LOCA."

INSERT

BASES INSERT

The hydrogen recombiner system is designed to maintain the hydrogen concentration in the containment structure below 4 volume percent following a LOCA. The specified system flow rate (50 scfm) is the flow at post LOCA containment conditions (13 psia and 130°F) assumed in the design analysis to assure the hydrogen concentration is maintained below 4 volume percent following a LOCA.

The equation specified below shall be used when performing Surveillance 4.6.4.2.b.3 to correct the flow measured under test conditions to the corresponding flow at design basis post accident containment conditions of 13 psia and 130°F.

$$scfm_{PA} = scfm_{Test}(0.00154)\frac{T_C}{P_{Blower}}\left(1+2682.45\frac{P_C}{T_C^2}\right)\left(13-0.022\,T_C\left(1-\frac{P_{Blower}}{P_C}\right)\right)$$

where:

T_C = average containment temperature during testing (°R)

P_{Blower} = blower suction pressure during testing (psia)

P_C = containment pressure during testing (psia)

ATTACHMENT A-2

Beaver Valley Power Station, Unit No. 2
License Amendment Request No. 150

The following is a list of the affected pages:

Affected Pages:	3/4 6-32 B 3/4 6-12

ELECTRIC HYDROGEN RECOMBINERS

LIMITING CONDITION FOR OPERATION

3.6.4.2 Two separate and independent containment hydrogen recombiner systems shall be OPERABLE.

APPLICABILITY: MODES 1 and 2.

ACTION:

With one hydrogen recombiner system inoperable, restore the inoperable system to OPERABLE status within 30 days or be in HOT STANDBY within the next 12 hours.

SURVEILLANCE REQUIREMENTS

4.6.4.2 Each hydrogen recombiner system shall be demonstrated OPERABLE:

a. At least once per 6 months by verifying during a recombiner system functional test using outside atmospheric flow rate of ≥ 42 scfm that the heater outlet temperature increases to ≥ 700°F within 90 minutes and is maintained for at least 2 hours.

b. At least once per 18 months by:

1. Performing a CHANNEL CALIBRATION of all recombiner instrumentation and control circuits.

2. Verifying through a visual examination that there is no evidence of abnormal conditions within the recombiners (i.e., loose wiring or structural connections, deposits of foreign materials, etc.).

INSERT New SR

3. Verifying during a recombiner system functional test using containment atmospheric air at a pressure of < 13 psia and a flow rate of ≥ 42 scfm, that the heater temperature increases to ≥ 1100°F within 5 hours and is maintained for at least 4 hours.

4. Verifying the integrity of all heater electrical circuits by performing a continuity and resistance to ground test immediately following the above required functional test. The resistance to ground for any heater phase shall be ≥ 10,000 ohms.

c. Verifying that the hydrogen recombiner isolation valves (2HCS-MOV110A&B and 2HCS-MOV113A&B) are closed and de-energized after every surveillance test (per 4.6.4.2.a) is completed or after their use, post-accidents, to recombine hydrogen in the containment is completed.

TS INSERT

Performing a hydrogen recombiner system functional test using containment atmospheric air to verify the following:

a. The recombiner blower flow when corrected to 13 psia and 130°F is ≥ 42 scfm, and

b. The heater temperature increases to ≥ 1100°F within 5 hours and is maintained for at least 4 hours while operating at a recombiner blower flow that when corrected to 13 psia and 130°F is ≥ 42 scfm.

3/4.6.3 CONTAINMENT ISOLATION VALVES

The OPERABILITY of the containment isolation valves ensures that the containment atmosphere will be isolated from the outside environment in the event of a release of radioactive material to the containment atmosphere or pressurization of the containment. Containment isolation within the time limits specified ensures that the release of radioactive material to the environment will be consistent with the assumptions used in the analyses for both a LOCA and major secondary system breaks.

The opening of locked or sealed closed containment isolation valves on an intermittent basis under administrative control includes the following considerations: (1) stationing an operator, who is in constant communication with the control room, at the valve controls, (2) instructing this operator to close these valves in an accident situation, and (3) assuring that environmental conditions will not preclude access to close the valves and that this action will prevent the release of radioactivity outside the containment.

3/4.6.4 COMBUSTIBLE GAS CONTROL

The OPERABILITY of the equipment and systems required for the detection and control of hydrogen gas ensures that this equipment will be available to maintain the hydrogen concentration within containment below its flammable limit during post-LOCA conditions. Either recombiner unit is capable of controlling the expected hydrogen generation associated with 1) zirconium-water reactions, 2) radiolytic decomposition of water, and 3) corrosion of metals within containment. These hydrogen control systems are consistent with the recommendations of Regulatory Guide 1.7, "Control of Combustible Gas Concentrations in Containment Following a LOCA."

INSERT

BASES INSERT

The hydrogen recombiner system is designed to maintain the hydrogen concentration in the containment structure below 4 volume percent following a LOCA. The required system flow rate (42 scfm) is the flow at post LOCA containment conditions (13 psia and 130°F) assumed in the design analysis to assure the hydrogen concentration is maintained below 4 volume percent following a LOCA.

The equation specified below shall be used when performing Surveillance 4.6.4.2.b.3 to correct the flow measured under test conditions to the corresponding flow at design basis post accident containment conditions of 13 psia and 130°F.

$$scfm_{PA} = scfm_{Test}(0.00154)\frac{T_C}{P_{Blower}}\left(1+2682.45\frac{P_C}{T_C^2}\right)\left(13-0.022\,T_C\left(1-\frac{P_{Blower}}{P_C}\right)\right)$$

where:

T_C = average containment temperature during testing (°R)

P_{Blower} = blower suction pressure during testing (psia)

P_C = containment pressure during testing (psia)

ATTACHMENT B

Beaver Valley Power Station, Unit Nos. 1 and 2
License Amendment Request Nos. 275 and 150
REVISION OF HYDROGEN RECOMBINER SPECIFICATION 3/4.6.4.2

A. DESCRIPTION OF AMENDMENT REQUEST

The proposed amendment will revise the Unit 1 and 2 Technical Specification (TS) 3/4.6.4.2 titled "Electrical Hydrogen Recombiners." Specifically, the Surveillance Requirement (SR) 4.6.4.2.b.3 will be modified. The SR specifies a hydrogen recombiner functional test be performed every 18 months. The SR verifies the recombiner heater operation at a specified flow rate using containment atmospheric air. The SR also specifies a maximum containment pressure (13 psia) at which the functional test must be performed and a required flow rate to be established. This pressure represents the design basis post accident containment condition under which the hydrogen recombiners are expected to function and maintain the specified flow. The surveillance is being revised to verify that the hydrogen recombiner flow, when corrected to the post accident design conditions of 13 psia and 130°F, is greater than or equal to the required flow. The corresponding design basis temperature for post accident recombiner operation is included in the SR because it is required to correct the test flow to the design basis operating conditions. The proposed change is intended to allow performance of the functional test at containment pressures greater than 13 psia. The revised SR will allow verification of the recombiner blower required flow by measuring the flow under normal or current test conditions (e.g., atmospheric pressure) and calculating the expected system performance under design basis operating conditions. In order to support the calculations necessary to confirm the recombiner blower performance, the proposed change includes the addition of an equation and associated discussion to the bases. The equation will correct the measured test flow to a corresponding flow at the design basis operating pressure and temperature.

In addition to the technical change described above, SR 4.6.4.2.b.3 is modified by separating the criteria for the system blower performance and heater operation into separate parts of the same surveillance. This administrative change to the surveillance was made to improve the presentation of the requirements and is not intended to introduce a technical change.

Format and editorial changes are included as necessary to facilitate the revision of the TS text and addition of text to the bases. The format of older TS pages is updated to conform to the current TS page format (i.e., left margin lines are deleted and decimal point added).

B. DESIGN BASES

The post-Design Basis Accident (DBA) hydrogen control system for Beaver Valley Power Station (BVPS) recirculates a portion of the containment atmosphere through either of two redundant hydrogen recombiners. The containment spray system provides mixing of the containment atmosphere, assuring that the gas entering the recombiner is representative of the post accident containment atmosphere. The recombiner combines the hydrogen in the containment with oxygen to form water. Recombination prevents explosions or fire hazards due to excessive hydrogen in the containment atmosphere following a DBA.

In the event of a single active failure of any component, each unit is equipped with two 100 percent redundant hydrogen recombiner systems. Each recombiner system is powered from a separate emergency bus. The redundant systems provide assurance that the containment hydrogen concentration is maintained at a safe level following a DBA.

The hydrogen recombiner system is designed to maintain the hydrogen concentration in the containment structure below 4 volume percent following a DBA. The specified system flow rates, 50 scfm (Unit 1) and 42 scfm (Unit 2), are the required flows during post DBA containment conditions (13 psia and 130°F) assumed in the design analysis to assure the hydrogen concentration is maintained below 4 volume percent following a DBA.

During the time recombiners would be operating after a DBA, the containment pressure is controlled by the operators. The recombiner startup procedure referenced by the emergency operating procedure directs operations to control containment pressure to approximately 13 psia during recombiner operation. Based on the post DBA containment analysis, which maximizes containment temperature and minimizes pressure, the corresponding containment temperature for 13 psia is 130°F. This temperature represents the worst case or limiting value for calculating recombiner flow at a containment pressure of 13 psia.

Each hydrogen recombiner system includes a blower, a temperature controlled electric heater, a thermal recombiner (reaction chamber), and an air blast heat exchanger. The system is manually started. The system blower provides the gas flow from containment. The gas is heated to the preselected control temperature. The gases react in the reaction chamber and, as the gas temperature in the reaction chamber approaches a preset point of approximately 1,300°F, the gas heater automatically reduces its power demand to maintain the preset temperature. The rise in gas temperature occurring in the reaction chamber is caused by the heat liberated from the exothermic hydrogen-oxygen reaction. The system then continues to operate automatically, with the heater power gradually increasing as the hydrogen and oxygen gases are depleted, maintaining the same preset reaction chamber temperature. The gas flow out of the reaction chamber is cooled by an air blast heat exchanger and returned to the containment.

C. JUSTIFICATION

The existing SR requires that the functional test be performed at a specified maximum containment air pressure and minimum recombiner flow rate. The specified pressure and flow rate represent the design basis values at which the recombiner must function to maintain the post accident hydrogen concentration inside containment below the limit (4 percent). The proposed change would allow the functional test to be performed at a containment pressure other than the design basis (13 psia) and verification by calculation, that the specified recombiner flow could be met at the design basis pressure and temperature. The proposed change revises the TS bases to include the necessary equation to correct the flow measured under test conditions to the corresponding flow at the design basis conditions.

Hydrogen Recombiner Flow Correction Formula Derivation

The hydrogen recombiner system consists of a blower, heaters to heat the process flow, a reaction chamber, a cooling fan, and piping to connect the process flow path to and from the containment. The process blower is a centrifugal fan which delivers a constant volumetric flow over a range of temperatures and pressures with constant system head loss characteristics. The operating flow point can be found as the intersection of the fan curve and the system curve when plotted in terms of head and flow. Since the volumetric flow is constant, the mass flow will vary depending on the density or pressure and temperature conditions. Correcting from one flow condition to another can be done using ratios of the temperature and pressure for different conditions; however, the correction must relate back to conditions at the fan since constant volumetric flow occurs at this point in the system. For two different flow conditions, A and B in the system, the relationship can be stated as :

$$\text{Blower CFM}_A = \text{Blower CFM}_B \qquad (1)$$

Blower volumetric flow can be stated in terms of the mass flow in standard cubic feet per minute (SCFM) as follows:

$$q_{\text{blower}} = \text{scfm}\,\frac{14.7}{528}\left(\frac{T_{\text{blower}}}{P_{\text{blower}}}\right) \qquad (2)$$

where

T_{blower} = containment temperature in degrees R
P_{blower} = containment pressure psia
14.7 = standard atmospheric pressure
528 = standard atmospheric temperature degrees R (68 degrees F)
scfm = flow at standard conditions

Since q_{blower} is a constant for any pressure and temperature conditions, it follows that for two different flow conditions, A and B:

$$\text{scfm}_A\,\frac{14.7}{528}\left(\frac{T_{\text{blowerA}}}{P_{\text{blowerA}}}\right) = \text{scfm}_B\,\frac{14.7}{528}\left(\frac{T_{\text{blowerB}}}{P_{\text{blowerB}}}\right) \qquad (3)$$

A formula was derived for the blower temperature (T_{blower}) based on measured temperature rise and calculated blower horsepower variations with flow density. This formula was verified by data collected during recombiner testing. The formula is basically a correction of the measured temperature rise across the blower based on density in the suction line. The blower temperature, which is represented as the average temperature between the blower suction and discharge line, is equivalent to one-half the corrected temperature rise plus the suction temperature; i.e:

$$T_{blower} = T_C + \frac{144(535)P_C}{2(14.36)T_C} \qquad (4)$$

where 144 is the measured temperature rise at the test condition of 14.36 psia and 535°R and Tc is the containment temperature in degrees Rankine.

The blower pressure P_{blower} is referenced to the suction condition and is equivalent to the containment pressure less piping pressure losses from the containment to the blower suction; i.e,

$$P_{blower} = P_C - \Delta P \qquad (5)$$

where

P_C = containment pressure psia

ΔP = suction piping pressure loss psi

and

$\Delta P = h \bullet \rho$ where h = suction head loss, and

ρ = density

Since volumetric flow in the blower is a constant, blower head rise and system head loss must also be a constant over the range of pressure and temperatures. With a constant suction head loss, the pressure drop varies only with the density of the air stream. The pressure drop can be measured at known conditions and scaled based on the density changes to post accident conditions.

$$\Delta P_A = \frac{\Delta P_{Test}\rho_A}{\rho_{Test}} \text{ or,}$$

$$\Delta P_A = \frac{\Delta P_{Test} P_A T_{Test}}{P_{Test} T_A} \qquad (6)$$

at Post Accident Conditions:

P_A = 13 psia

T_A = 590°R

$$\Delta P_{PA} = \frac{\Delta P_{Test}\, T_{Test}\, 13\,psia}{P_{Test}\, 590\,°R}$$

Where P_{Test} is containment Pressure at test conditions and T_{test} is containment Temperature at test conditions.

Substituting into equation (5) gives:

$$P_{PA} = 13\ psia - \frac{\Delta P_{Test}\, T_{Test}\, 13\,psia}{P_{Test}\, 590°\,R} \qquad (7)$$

Substituting equations (4), (5) and (7) into equation (3) :

$$scfm_{PA} = scfm_{Test} \frac{T_{Blower}}{P_{Blower}} \frac{P_{PA}}{T_{PA}}$$

$$= scfm_{M} \left(\frac{T_C + \frac{2682.45\, P_C}{T_c}}{P_{Blower}\, 649} \right) \left(13 - (P_C - P_{Blower}) \frac{T_C}{P_C} \frac{13}{590} \right) \qquad (8)$$

Where 649 is the blower temperature in degrees Rankine associated with the post accident condition.

Simplifying equation (8) gives the following:

$$scfm_{PA} = scfm_{Test} (0.00154) \frac{T_C}{P_{Blower}} \left(1 + 2682.45 \frac{P_C}{T_C^2} \right) \left(13 - 0.022\, T_C \left(1 - \frac{P_{Blower}}{P_C} \right) \right) \qquad (9)$$

This formula provides a method for correcting a measured air flow at test conditions to expected post accident conditions. The correction requires the measurement of containment pressure and temperature and blower suction pressure. T_C is the containment average temperature and in this equation must be corrected to degrees Rankine.

The proposed change is an alternate method of determining system performance that provides additional operating flexibility. The ability of the system to deliver the required post accident flow rate will be verified by measuring the flow of the recombiner blowers under the containment pressure and temperature conditions present during the test and calculating the expected post-accident performance using the equation contained in the TS bases.

The proposed method of verifying recombiner flow will accurately confirm that the required flow specified in the SR can be met under design basis operating conditions. The proposed test method provides a level of assurance of system performance that is equivalent to the current SR. In addition, the proposed test method introduces additional flexibility to verify that no unacceptable level of degradation has occurred in system performance.

D. SAFETY ANALYSIS

The hydrogen recombiner system is designed to maintain the hydrogen concentration in the containment structure below 4 volume percent following a DBA. The required system flow rates, 50 scfm (Unit 1) and 42 scfm (Unit 2), are the flows at post DBA containment conditions (13 psia and 130°F) assumed in the design analysis to assure the hydrogen concentration is maintained below 4 volume percent following a DBA.

The proposed change to SR 4.6.4.2.b.3, including the supporting bases change, provides an alternate method for verifying the hydrogen recombiner system performance. The proposed change does not modify any plant equipment or the manner in which plant equipment is normally operated. The proposed method of verifying system performance accounts for the pressure and temperature conditions during the test and corrects the measured test flow based on the post DBA operating conditions. The proposed method provides a level of assurance that the recombiner can perform its design function that is equivalent to the assurance provided by the current SR. Therefore, the proposed change does not reduce the effectiveness of the TS requirements and continues to provide adequate verification that the recombiner system can perform its design function.

The proposed changes to the surveillance requirement and TS bases additions continue to assure the performance of the hydrogen recombiners are adequately monitored and that the design capability to maintain the hydrogen concentration in the containment structure below 4 volume percent following a DBA is verified and maintained. As such, the proposed revisions continue to assure that the hydrogen recombiners perform in a manner consistent with the safety analysis assumptions. Therefore, the proposed change does not adversely affect the safety of the plant.

E. NO SIGNIFICANT HAZARDS EVALUATION

The no significant hazard considerations involved with the proposed amendment have been evaluated. The evaluation focused on the three standards set forth in 10 CFR 50.92(c), as quoted below:

> The Commission may make a final determination, pursuant to the procedures in paragraph 50.91, that a proposed amendment to an operating license for a facility licensed under paragraph 50.21(b) or paragraph 50.22 or for a testing facility involves no significant hazards consideration, if operation of the facility in accordance with the proposed amendment would not:
>
> (1) Involve a significant increase in the probability or consequences of an accident previously evaluated; or
>
> (2) Create the possibility of a new or different kind of accident from any accident previously evaluated; or
>
> (3) Involve a significant reduction in a margin of safety.

The following evaluation is provided for the no significant hazards consideration standards.

1. Does the change involve a significant increase in the probability or consequences of an accident previously evaluated?

   The proposed change does not result in any hardware changes to the hydrogen recombiners. Additionally, the hydrogen recombiners are not assumed to be accident initiators of any analyzed event. The proposed change revises the method for performing the hydrogen recombiner functional test specified in Technical Specification (TS) Surveillance Requirement (SR) 4.6.4.2.b.3. The proposed change to SR 4.6.4.2.b.3 does not reduce the effectiveness of the requirement and continues to verify the capability of the hydrogen recombiners to perform their design basis function consistent with the assumptions of the applicable safety analysis. Therefore, the consequences or probability of accidents previously evaluated in the UFSAR remain unchanged.

The addition of supporting TS bases text and the format and editorial changes made to the TS have no impact on plant operation or safety.

Therefore, the proposed change does not involve a significant increase in the probability or consequences of an accident previously evaluated.

2. Does the change create the possibility of a new or different kind of accident from any accident previously evaluated?

   The proposed change does not necessitate a physical alteration of the plant (no new or different type of equipment will be installed) or changes in parameters governing normal plant operation. The proposed change does not affect any accidents previously evaluated in the UFSAR and continues to provide assurance that the hydrogen recombiners remain capable of performing their design function. The proposed change does not introduce any new failure modes or affect the probability of a malfunction.

   Therefore, the proposed change does not create the possibility of a new or different kind of accident from any accident previously evaluated.

3. Does the change involve a significant reduction in a margin of safety?

   The margin of safety depends on the maintenance of specific operating parameters and systems within design requirements and safety analysis assumptions.

   The proposed change does not involve revisions to any safety limits or safety system settings that would adversely impact plant safety. In addition, the proposed change does not affect the ability of the hydrogen recombiners to perform their design function.

The proposed change revises the method for performing the hydrogen recombiner functional test specified in SR 4.6.4.2.b.3. However, the proposed change to SR 4.6.4.2.b.3 does not reduce the effectiveness of the requirement and continues to verify the capability of the hydrogen recombiners to perform their design basis function consistent with the assumptions of the applicable safety analysis.

The addition of supporting TS bases text and the format and editorial changes made to the TS have no impact on plant operation or safety.

Therefore, the proposed change does not involve a significant reduction in the margin of safety.

F. NO SIGNIFICANT HAZARDS CONSIDERATION DETERMINATION

Based on the considerations expressed above, it is concluded that the activities associated with this license amendment request satisfy the requirements of 10 CFR 50.92(c) and, accordingly, a no significant hazards consideration finding is justified.

G. ENVIRONMENTAL CONSIDERATION

This license amendment request changes a requirement with respect to the installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20. It has been determined that this license amendment request involves no significant increase in the amounts, and no significant change in the types of any effluents that may be released offsite, and that there is no significant increase in individual or cumulative occupational radiation exposure. This license amendment request may change requirements with respect to installation or use of a facility component located within the restricted area or change an inspection or surveillance requirement; however, the category of this licensing action does not individually or cumulatively have a significant effect on the human environment. Accordingly, this license amendment request meets 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 need be prepared in connection with the issuance of this license amendment request.