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10 CFR 50.90

June 29, 2016
Serial: HNP-16-050

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

Shearon Harris Nuclear Power Plant, Unit 1
Docket No. 50-400/Renewed License No. NPF-63

Subject: License Amendment Request to Relocate Technical Specifications Pertaining to the Explosive Gas and Storage Tank Radioactivity Monitoring Program

Ladies and Gentlemen:

In accordance with the provisions of 10 CFR 50.90, Duke Energy Progress, Inc. (Duke Energy), hereby requests a revision to the Technical Specifications (TS) for the Shearon Harris Nuclear Power Plant, Unit 1 (HNP). The proposed license amendment relocates the requirements of TS 3/4.11.2.5, "Explosive Gas Mixture," and TS 3/4.11.1.4, "Liquid Holdup Tanks," to licensee control. Specifically, the description for TS 6.8.4.j, "Gas Storage Tank Radioactivity Monitoring Program," will be modified to include the controls for potentially explosive gas mixtures contained in the Gaseous Waste Processing System and the quantity of radioactivity contained in unprotected outdoor liquid storage tanks. Requirements associated with TS 3/4.11.2.5 and TS 3/4.11.1.4 will be relocated to the licensee-controlled Plant Programs Procedure PLP-114, "Relocated Technical Specifications and Design Basis Requirements." These changes are consistent with Revision 4 of NUREG-1431, "Standard Technical Specifications – Westinghouse Plants" (Agency-wide Documents Access and Management System (ADAMS) Accession No. ML12100A222).

The proposed changes have been evaluated in accordance with 10 CFR 50.91(a)(1) using criteria in 10 CFR 50.92(c), and it has been determined that the proposed changes involve no significant hazards consideration. Attachment 1 of this license amendment request provides Duke Energy's evaluation of the proposed changes. Attachment 2 provides a copy of the proposed TS changes. Attachment 3 provides a copy of the revised TS pages. Attachment 4 provides a copy of the TS Bases markup based on the proposed changes.

Approval of the proposed license amendment is requested by July 1, 2017. The amendment shall be implemented within 90 days following approval.

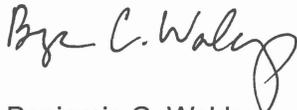
In accordance with 10 CFR 50.91, a copy of this application, with attachments, is being provided to the designated North Carolina State Official.

This document contains no new Regulatory Commitments.

Please refer any questions regarding this submittal to John Caves, HNP Regulatory Affairs Manager, at (919) 362-2406.

I declare under penalty of perjury that the foregoing is true and correct.
Executed on June 29, 2016.

Sincerely,



Benjamin C. Waldrep

Attachments:

1. Evaluation of the Proposed Change
2. Proposed Technical Specification Changes
3. Revised Technical Specification Pages
4. Proposed Technical Specification Bases Changes

cc: Mr. M. J. Riches, NRC Sr. Resident Inspector, HNP
Mr. W. L. Cox, III, Section Chief N.C. DHSR
Ms. M. Barillas, NRC Project Manager, HNP
Ms. C. Haney, NRC Regional Administrator, Region II

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U.S. Nuclear Regulatory Commission
Serial HNP-16-050
Attachment 1

HNP-16-050

ATTACHMENT 1

EVALUATION OF THE PROPOSED CHANGE

SHEARON HARRIS NUCLEAR POWER PLANT / UNIT 1

DOCKET NO. 50-400

RENEWED LICENSE NUMBER NPF-063

Evaluation of the Proposed Change

Subject: License Amendment Request to Relocate Technical Specifications Pertaining to the Explosive Gas and Storage Tank Radioactivity Monitoring Program

1.0 SUMMARY DESCRIPTION

In accordance with the provisions of 10 CFR 50.90, Duke Energy Progress, Inc. (Duke Energy), is proposing changes to the Shearon Harris Nuclear Power Plant, Unit 1 (HNP), Technical Specifications (TS), to relocate the requirements of TS 3/4.11.2.5, "Explosive Gas Mixture," and TS 3/4.11.1.4, "Liquid Holdup Tanks," to licensee control. Specifically, the description for TS 6.8.4.j, "Gas Storage Tank Radioactivity Monitoring Program," will be modified to include the controls for potentially explosive gas mixtures contained in the Gaseous Waste Processing System and the quantity of radioactivity contained in unprotected outdoor liquid storage tanks. Requirements associated with TS 3/4.11.2.5 and TS 3/4.11.1.4 will be relocated to the licensee-controlled Plant Programs Procedure PLP-114, "Relocated Technical Specifications and Design Basis Requirements." These changes are consistent with Revision 4 of NUREG-1431, "Standard Technical Specifications – Westinghouse Plants" (Reference 1).

2.0 DETAILED DESCRIPTION

Duke Energy proposes changes to the HNP TS as follows:

- TS Definition 1.16, GASEOUS RADWASTE TREATMENT SYSTEM, is deleted.
- TS 3/4.11.2.5 and TS 3/4.11.1.4 are deleted.
- TS 6.8.4.j is revised to read:

Explosive Gas and Storage Tank Radioactivity Monitoring Program

This program provides controls for potentially explosive gas mixtures contained in the Gaseous Waste Processing System (GWPS), the quantity of radioactivity contained in gas storage tanks, and the quantity of radioactivity contained in unprotected outdoor liquid storage tanks. The gaseous radioactivity quantities shall be determined following the methodology in Branch Technical Position (BTP) ETSB 11-5, "Postulated Radioactive Release due to Waste Gas System Leak or Failure."

The program shall include:

- 1) The limits for concentrations of hydrogen and oxygen in the GWPS and a surveillance program to ensure the limits are maintained. Such limits shall be appropriate to the system's design criteria (i.e., whether or not the system is designed to withstand a hydrogen explosion).
- 2) A surveillance program to ensure that the quantity of radioactivity contained in each gas storage tank is less than the amount that would result in a whole body exposure of ≥ 0.5 rem to any individual in an unrestricted area, in the event of an uncontrolled release of the tanks' contents.

- 3) A surveillance program to ensure that the quantity of radioactivity contained in all outdoor liquid radwaste tanks that are not surrounded by liners, dikes, or walls, capable of holding the tanks' contents and that do not have tank overflows and surrounding area drains connected to the Liquid Waste Processing System is less than the amount that would result in concentrations less than the limits of 10 CFR 20, Appendix B, Table 2, Column 2, at the nearest potable water supply and the nearest surface water supply in an unrestricted area, in the event of an uncontrolled release of the tanks' contents.

The provisions of SR [Surveillance Requirement] 4.0.2 and SR 4.0.3 are applicable to the Explosive Gas and Storage Tank Radioactivity Monitoring Program surveillance frequencies.

The respective limiting condition for operation, applicability, actions, and SRs associated with TS 3/4.11.2.5 and TS 3/4.11.1.4 will be relocated to the HNP Plant Programs Procedure PLP-114. This licensee-controlled document is incorporated by reference in the HNP Final Safety Analysis Report (FSAR) Section 1.6, "Material Incorporated By Reference," which makes it part of the HNP Current Licensing Basis. Changes to this procedure require a 10 CFR 50.59 evaluation.

3.0 TECHNICAL EVALUATION

Gaseous Waste Processing System

TS 3/4.11.2.5 specifies the details for implementing the requirements for the explosive gas mixture in the Gaseous Radwaste Treatment System downstream of the hydrogen recombiners. Maintaining the concentration of hydrogen and oxygen below their flammability limits reduces the risk of an event that could lead to an uncontrolled release of radioactive material from the waste gas storage system.

Although HNP TS use the term "Gaseous Radwaste Treatment System," the HNP FSAR uses the term "Gaseous Waste Processing System (GWPS)." Therefore, the HNP FSAR terminology is used in the remainder of this request. The GWPS is designed to collect, process, and store gaseous wastes generated due to plant operations, including anticipated operational occurrences. The system is designed to assure that the release of gaseous effluents from the plant and expected offsite doses are as low as reasonably achievable.

The GWPS consists mainly of a closed loop comprised of two waste gas compressors, two catalytic hydrogen recombiners, and ten waste gas decay tanks to accumulate the fission product gases. All pipes that contain radioactive gases are shielded as necessary and no piping is run through normally occupied areas. One of the hydrogen recombiners is in long-term shutdown.

The GWPS reduces the fission gas concentration in the Reactor Coolant System, which in turn reduces the escape of fission gases from the Reactor Coolant System during maintenance or through equipment leakage. The primary source of radioactive gas is the volume control tank purge.

Since hydrogen is continuously removed in the hydrogen recombiner, this gas is not allowed to build up in the GWPS. Nitrogen gas can be added to the GWPS from the following sources

during normal plant operations: (1) volume control tank can be purged with nitrogen from the nitrogen storage system during degassing operations, (2) the pressurizer relief tank can be vented to the GWPS to maintain nitrogen purity, and (3) nitrogen gas can be added under the recycle holdup tank diaphragm to prevent an explosive gas mixture buildup. In the event that the oxygen concentration in a gas decay tank needs to be reduced, nitrogen gas can be added from the plant nitrogen system. Impurities in the bulk hydrogen and oxygen supplies also contribute to the buildup of gases in the GWPS. A small concentration of helium gas is also collected in the GWPS. Stable and long lived isotopes of fission gases also contribute small quantities to the GWPS gas volume.

The portion of the GWPS downstream of the hydrogen recombiners includes the Waste Gas Decay Tanks and associated piping and valves. The system is designed to preclude the possibility of an internal explosion. The oxygen concentration is monitored and controlled to assure that a flammable hydrogen-oxygen mixture does not occur as required by General Design Criterion 3.

Liquid Waste Processing System

TS 3/4.11.1.4 currently specifies the requirements pertaining to the quantity of radioactive material contained in unprotected outdoor tanks. The tanks listed in this specification include all outdoor radwaste tanks that are not surrounded by liners, dikes, or walls capable of holding the tank contents and that do not have tank overflows and surrounding area drains connected to the Liquid Waste Treatment System. In restricting the quantity of radioactive material contained in the specified tanks, assurance is provided that in the event of an uncontrolled release of the tanks' contents, the resulting concentrations would be less than the limits of 10 CFR Part 20, Appendix B, Table 2, Column 2, at the nearest potable water supply and the nearest surface water supply in an unrestricted area.

Although HNP TS use the term "Liquid Radwaste Treatment System," the HNP FSAR uses the term "Liquid Waste Processing System (LWPS)." Therefore, the HNP FSAR terminology is used in the remainder of this request. The LWPS provides for the collection, storing, processing, and controlled release of radioactive and potentially radioactive liquids associated with the operation of HNP. The discharge of treated wastes is controlled and monitored to ensure that any discharges are as low as is reasonably achievable and that they are in conformance with the requirements specified in 10 CFR 20 and 10 CFR 50.

The LWPS is designed to collect all primary plant radioactive waste water and, by processing, reduce the radionuclide concentration to permit its discharge to the environs. In addition, the LWPS is designed to treat occasional batches of secondary liquids should primary to secondary leakage occur. Differences in primary and secondary system water chemistry must be considered prior to reusing liquids from these sources.

HNP does not utilize tanks that are applicable to TS 3/4.11.1.4. The outdoor tanks onsite are protected, their potential discharge paths are monitored, and they can be directed to liquid radwaste tanks.

Explosive Gas and Storage Tank Radioactivity Monitoring Program

The revised TS 6.8.4.j program description replaces the detailed TS requirements for explosive gas monitoring and liquid holdup tanks. The proposed Explosive Gas and Storage Tank

Radioactivity Monitoring Program is consistent with the standard TS program in NUREG-1431. The net effect of the proposed change is to retain key requirements within the TS and simplify the overall content of the HNP TS, consistent with the content of the standard TS in NUREG-1431.

At the time the TS criteria were being used to develop the content of the Improved Standard TS in NUREG-1431, the Nuclear Regulatory Commission (NRC) was working on a generic solution for removing Radioactive Effluent TS (RETS). The resulting Generic Letter 89-01 (Reference 2) allowed for the removal of RETS addressed by programmatic controls in the Administrative Controls section of the TS. Those specifications under the heading of RETS not covered by programmatic controls were retained as requirements in the existing plant TS, including requirements for explosive gas monitoring instrumentation, limitations on the quantity of radioactivity in liquid or gaseous holdup or storage tanks, and limitations on explosive gas mixtures in off-gas treatment systems and storage tanks. Generic Letter 89-01 allowed the applicable RETS to be placed in a plant's Offsite Dose Calculation Manual (ODCM) or Process Control Program (PCP). The ODCM and PCP requirements were specified in the TS and were determined to provide adequate regulatory control to address the RETS requirements relocated by Generic Letter 89-01. As stated in Generic Letter 89-01:

"The NRC staff has examined the contents of the Radiological Effluent Technical Specifications (RETS) in relation to the Commission's Interim Policy Statement on Technical Specification Improvements. The staff has determined that programmatic controls can be implemented in the Administrative Controls section of the Technical Specifications (TS) to satisfy existing regulatory requirements for RETS. At the same time, the procedural details of the current TS on radioactive effluents and radiological environmental monitoring can be relocated to the Offsite Dose Calculation Manual (ODCM). Likewise, the procedural details of the current TS on solid radioactive wastes can be relocated to the Process Control Program (PCP). These actions simplify the RETS, meet the regulatory requirements for radioactive effluents and radiological environmental monitoring, and are provided as a line-item improvement of the TS, consistent with the goals of the Policy Statement."

The RETS not relocated by Generic Letter 89-01 were not adequately addressed by the existing ODCM or PCP administrative controls. However, during development of the new standard TS in NUREG-1431, Revision 0 (Reference 3), the RETS not addressed by Generic Letter 89-01 were removed from the standard TS. Similar to Generic Letter 89-01, the removal of the remaining RETS was justified by the inclusion of a program in the administrative controls section of the standard TS that provided adequate regulatory control to address the remaining RETS requirements.

The Explosive Gas and Storage Tank Radioactivity Monitoring Program incorporated in NUREG-1431 contained provisions that incorporated the bases for the affected RETS requirements (i.e., that explosive gas concentrations and radioactivity content must be monitored and controlled to assure the applicable design limitations of the systems and offsite dose limits are not exceeded). The program provided TS requirements to assure that appropriate procedures were maintained to monitor and control both the radioactivity and explosive gas content of the storage systems. In addition, the program contained TS requirements that specified the use of accepted NRC methodologies for determining the curie content limits of the gas and liquid storage tanks. Therefore, the incorporation of the new Explosive Gas and Storage Tank Radioactivity Monitoring Program into the standard TS

provided adequate regulatory control and assurance that the explosive gas and radioactivity content of the tanks are monitored and controlled within applicable limits. After the addition of the Explosive Gas and Storage Tank Radioactivity Monitoring Program, the remaining RETS effectively contained only the procedural details necessary for implementing the program requirements. Therefore, similar to Generic Letter 89-01, the remaining RETS requirements were adequately addressed by a program specified in the TS and the individual RETS were removed from the TS.

In 1995, the NRC issued further generic guidance that pertained to one of the remaining RETS (monitoring requirements for explosive gas concentrations in the Waste Gas Storage Tanks). In Generic Letter 95-10, "Relocation of Selected Technical Specifications Requirements Related to Instrumentation," (Reference 4) the NRC evaluated several instrument-related TS for relocation, including the Explosive Gas Monitoring Instrumentation TS. The generic letter concluded that:

"Acceptable concentrations of explosive gases are actually controlled by other limiting conditions for operation (e.g., Gaseous Effluents, Explosive Gas Mixture) or by programs described in the "Administrative Controls" section of TSs. The requirements related to explosive gas monitoring instrumentation do not conform to the 10 CFR 50.36 criteria for inclusion in the TSs. Therefore, licensees may propose to relocate the explosive gas monitoring instrumentation requirements....."

In the conclusion cited above, Generic Letter 95-10 justifies, in part, the relocation of the affected TS requirements when a program exists within the TS that provides adequate controls for the affected requirement(s). Thus, Generic Letter 95-10 provided further support for the replacement of detailed TS requirements with an administrative controls program such as the Explosive Gas and Storage Tank Radioactivity Monitoring Program.

The current HNP TS 6.8.4.j, "Gas Storage Tank Radioactivity Monitoring Program," was approved by the NRC in the Safety Evaluation for HNP License Amendment 64, dated June 12, 1996 (Reference 5). Amendment 64 relocated the TS requirements for TS 3/4.11.2.6, "Gas Storage Tanks," to plant procedure PLP-114 and added the Gas Storage Tank Radioactivity Monitoring Program to the TS. This TS section administratively controls the quantity of radioactivity contained in the gas storage tanks, consistent with NUREG-1431. Accordingly, there was no need for a separate limiting condition for operation for the gas storage tanks.

In relocating the gas storage tanks to a plant procedure, HNP stated that appropriate controls would be maintained to ensure that the quantity of radioactivity contained in each gas storage tank would be limited such that in the event of an uncontrolled release of a tank's contents, the resulting whole body dose to a member of the public at the nearest site boundary will not exceed 0.5 rem. Changes to this procedure, if necessary, are subject to the requirements of 10 CFR 50.59.

The staff reviewed information provided by HNP and concurred with HNP that the requirements related to the gas storage tanks did not satisfy any of the final policy statement criteria which would necessitate inclusion in the TS. The gas storage tanks do not include instrumentation that is (1) used to measure parameters that are initial condition assumptions for a design basis accident or transient, or (2) used to detect a significant abnormal degradation of the reactor coolant pressure boundary, and (3) used to provide for mitigation of design basis events.

Therefore, the requirements specified in those TS did not satisfy the criteria for TS, were relocated to other plant procedures, and are controlled by 10 CFR 50.59.

HNP has evaluated the requirements of current TS 3/4.11.2.5 and TS 3/4.11.1.4 with respect to the requirements of 10 CFR 50.36 and determined that the requirements do not satisfy any of the 10 CFR 50.36 criteria, which would necessitate that they be included in the TS. Specifically, the requirements are not:

- Installed instrumentation that is used to detect, and indicate in the control room, a significant abnormal degradation of the reactor coolant pressure boundary.
- A process variable, design feature, or operating restriction that is an initial condition of a design basis accident or transient analysis that either assumes the failure of or presents a challenge to the integrity of a fission product barrier.
- A structure, system, or component that is part of the primary success path and which functions or actuates to mitigate a design basis accident or transient that either assumes the failure of or presents a challenge to the integrity of a fission product barrier.
- A structure, system, or component which operating experience or probabilistic risk assessment has shown to be significant to public health and safety.

The revised TS 6.8.4.j, "Explosive Gas and Storage Tank Radioactivity Monitoring Program," proposed for the HNP TS is consistent with the standard TS program description of NUREG-1431. As in the standard TS, the proposed HNP program contains all the key elements to address the required limits specified in the affected RETS. However, the HNP program will not include reference to accepted NRC methodologies for determining the curie content limit of the liquid storage tanks. The current limit, as found in TS 3/4.11.1.4, of less than or equal to 10 curies, excluding tritium and dissolved or entrained noble gases, will remain in effect once the requirements are relocated to the licensee-controlled procedure, PLP-114.

The removal of the details for the specific limits, applicability, actions, and SRs from the TS is acceptable because this type of information is not necessary to be included in the TS to provide adequate protection of public health and safety. The revised TS 6.8.4.j still retains the requirement to include a program, which provides controls for potentially explosive gas mixtures contained in the GWPS and the quantity of radioactivity contained in unprotected outdoor liquid storage tanks, should HNP ever utilize such tanks in the future. It is also acceptable because the relocated procedural details will be adequately controlled in HNP plant procedure PLP-114. PLP-114 is incorporated in the HNP FSAR by reference in FSAR Section 1.6. Therefore, changes to PLP-114 are made in accordance with 10 CFR 50.59, which ensures changes are properly evaluated.

Deletion of the TS definition for "Gaseous Radwaste Treatment System," is administrative in nature as the defined term is no longer used in the HNP TS. Replacing "Gaseous Radwaste Treatment System," with "Gaseous Waste Processing System," in the revised TS 6.8.4.j program description is acceptable because it reflects the plant specific terminology used in the HNP FSAR.

The revised TS 6.8.4.j also adds a statement concerning the applicability of SR 4.0.2 and SR 4.0.3 to clarify that the allowances for Surveillance Frequency extensions do apply to the Explosive Gas and Storage Tank Radioactivity Monitoring Program. SR 4.0.2 requires that each SR shall be performed within the specified surveillance interval with a maximum allowable extension not to exceed 25% of the specified surveillance interval. SR 4.0.3 provides those actions that must be taken in the event a surveillance was not performed within its specified surveillance interval. Both SR 4.0.2 and SR 4.0.3 are applicable to the current TS 3/4.11.2.5 and TS 3/4.11.1.4. The addition of the SR 4.0.2 and SR 4.0.3 statement is a clarification needed to maintain provisions that are currently allowed in the limiting conditions for operation and SR sections of the HNP TS and is considered acceptable.

4.0 REGULATORY EVALUATION

4.1 Applicable Regulatory Requirements/Criteria

General Design Criterion (GDC) 3 of 10 CFR 50, Appendix A, requires structures, systems, and components important to safety shall be designed and located to minimize, consistent with other safety requirements, the probability and effect of fires and explosions. The proposed changes do not affect the design and location of the GWPS or LWPS components. The proposed TS 6.8.4.j requires that limits for concentrations of hydrogen and oxygen in the GWPS be established and a surveillance program to ensure the limits are maintained. It also requires a surveillance program to ensure the quantity of radioactivity contained in unprotected outdoor liquid storage tanks, should HNP ever utilize them in the future, is maintained. Such limits shall be appropriate to the system's design criteria.

GDC 60 of 10 CFR 50, Appendix A, requires the nuclear power unit design shall include means to control suitably the release of radioactive materials in gaseous and liquid effluents and to handle radioactive solid wastes produced during normal reactor operation, including anticipated operational occurrences. Sufficient holdup capacity shall be provided for retention of gaseous and liquid effluents containing radioactive materials, particularly where unfavorable site environmental conditions can be expected to impose unusual operational limitations upon the release of such effluents to the environment. The proposed changes do not reduce controls associated with liquid or gaseous releases or holdup capacity.

GDC 64 of 10 CFR 50, Appendix A, requires that means shall be provided for monitoring the reactor containment atmosphere, spaces containing components for recirculation of loss-of-coolant accident fluids, effluent discharge paths, and the plant environs for radioactivity that may be released from normal operations, including anticipated operational occurrences, and from postulated accidents. The proposed changes relocate controls for potentially explosive gas mixtures and the quantity of radioactivity contained in unprotected outdoor liquid storage tanks. The radioactive effluent monitoring requirements are not affected.

4.2 Precedent

Relocation of the requirements associated with explosive gas monitoring and liquid holdup tanks has typically occurred during a plant's conversion to the Improved Standard TS. The NRC has recently approved a similar relocation as part of the conversion of the Sequoyah Nuclear Plant, Units 1 and 2, in a Safety Evaluation dated September 30, 2015 (Reference 6).

The NRC has also approved focused relocation of requirements as part of amendments approved for the Monticello Nuclear Generating Plant and Beaver Valley Power Station, Units 1 and 2, in Safety Evaluations dated July 24, 2001 (Reference 7), and May 21, 2002 (Reference 8), respectively.

4.3 No Significant Hazards Consideration Determination

Pursuant to 10 CFR 50.90, Duke Energy Progress, Inc. (Duke Energy) proposes a license amendment request (LAR) for the Shearon Harris Nuclear Power Plant, Unit 1 (HNP) Technical Specifications (TS). The proposed LAR relocates the requirements of TS 3/4.11.2.5, "Explosive Gas Mixture," and TS 3/4.11.1.4, "Liquid Holdup Tanks," to licensee control. Specifically, the description for TS 6.8.4.j, "Gas Storage Tank Radioactivity Monitoring Program," is revised to include requirements pertaining to explosive gas monitoring and quantity of radioactive material contained in unprotected outdoor liquid storage tanks. TS 3/4.11.2.5 and TS 3/4.11.1.4 will be deleted and their associated specific requirements relocated to licensee-controlled Plant Programs Procedure PLP-114, "Relocated Technical Specifications and Design Basis Requirements."

Duke Energy has evaluated whether or not a significant hazards consideration is involved with the proposed amendment by focusing on the three standards set forth in 10 CFR 50.92, "Issuance of Amendment," as discussed below.

1. *Does the proposed change 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 or consequences of an accident previously evaluated. The proposed changes are administrative in nature and alter only the format and location of programmatic controls and procedural details relative to explosive gas monitoring and liquid holdup tanks. Existing TS containing procedural details are being relocated to licensee control. Compliance with applicable regulatory requirements will continue to be maintained. In addition, the proposed changes do not alter the conditions or assumptions in any of the previous accident analyses. Because the previous accident analyses remain bounding, the radiological consequences previously evaluated are not adversely affected by the proposed changes.

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

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

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 involve any change to the configuration or method of operation of any plant equipment. Accordingly, no new failure modes have been defined for any plant system or component important to safety nor has any new limiting single failure been identified as a result of the proposed changes. Also, there will be no change in types or increase in the amounts of any effluents released offsite.

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

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

The proposed changes do not involve a significant reduction in a margin of safety and are considered administrative in nature. The proposed changes do not involve any actual change in the methodology used in the monitoring of explosive gas mixtures contained in the Gaseous Waste Processing System. HNP does not currently utilize unprotected outdoor liquid storage tanks; therefore, there are no associated methodology changes with this request. These changes provide for the relocation of procedural details outside of the technical specifications with the addition of appropriate administrative controls to provide continued assurance of compliance to applicable regulatory requirements.

Therefore, the proposed changes do not involve a significant reduction in a margin of safety.

Based on the above, Duke Energy concludes that the proposed amendment does not involve a significant hazards consideration under the standards set forth in 10 CFR 50.92, and, accordingly, a finding of "no significant hazards consideration" is justified.

4.4 Conclusions

In conclusion, based on the considerations discussed above, (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of the amendment will not be inimical to the common defense and security or to the health and safety of the public.

5.0 ENVIRONMENTAL CONSIDERATION

Duke Energy has determined that the proposed amendment would change a requirement with respect to installation or use of a facility component located within the restricted area, as defined in 10 CFR Part 20, and would change an inspection or surveillance requirement. However, the proposed changes do not involve (i) a significant hazards consideration, (ii) a significant change in the types or significant increase in the amounts of any effluents that may be released offsite, or (iii) a significant increase in individual or cumulative occupational radiation exposure.

Accordingly, the proposed amendment meets the eligibility criterion for categorical exclusion set forth in 10 CFR 51.22(c)(9). Therefore, pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the proposed amendment.

6.0 REFERENCES

1. NUREG-1431, "Standard Technical Specifications – Westinghouse Plants," Revision 4, dated March 2012 (Agency-wide Documents Access and Management System (ADAMS) Accession No. ML 12100A222)

2. NRC Generic Letter 89-01, "Implementation of Programmatic Controls for Radiological Effluent Technical Specifications in the Administrative Controls Section of the Technical Specifications and the Relocation of Procedural Details of RETS to the Offsite Dose Calculation Manual or to the Process Control Program," dated January 31, 1989.
3. NUREG-1431, "Standard Technical Specifications – Westinghouse Plants," Revision 0, dated September 1992.
4. Generic Letter 95-10, "Relocation of Selected Technical Specifications Requirements Related to Instrumentation," dated December 15, 1995.
5. NRC Letter, "Issuance of Amendment No. 64 to Facility Operating License no. NPF-63 Regarding Relocation of Gas Storage Tanks – Shearon Harris Nuclear Power Plant, Unit 1 (TAC No. M93392)," dated June 12, 1996 (ADAMS Accession No. ML020580075)
6. NRC Letter, "Sequoyah Nuclear Plant, Units 1 and 2 – Issuance of Amendments for the Conversion to the Improved Technical Specifications with Beyond Scope Issues (TAC Nos. MF3128 AND MF3129)," dated September 30, 2015 (ADAMS Accession No. ML15238B460)
7. NRC Letter, "Monticello Nuclear Generating Plant – Issuance of Amendment RE: Relocation of the Radiological Effluent Technical Specifications to a Licensee-Controlled Program (TAC No. MB0731)," dated July 24, 2001 (ADAMS Accession No. ML011730062)
8. NRC Letter, "Beaver Valley Power Station, Unit Nos. 1 and 2 – Issuance of Amendment RE: Relocating Designated Technical Specifications to the Licensing Requirements Manual and the Offsite Dose Calculation Manual (TAC Nos. MB2048 and MB2049)," dated May 21, 2002 (ADAMS Accession No. ML020530410)

U.S. Nuclear Regulatory Commission
Serial HNP-16-050
Attachment 2

HNP-16-050

ATTACHMENT 2

PROPOSED TECHNICAL SPECIFICATION CHANGES
SHEARON HARRIS NUCLEAR POWER PLANT / UNIT 1

DOCKET NO. 50-400

RENEWED LICENSE NUMBER NPF-063

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1.0 DEFINITIONS

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"(DELETED)"

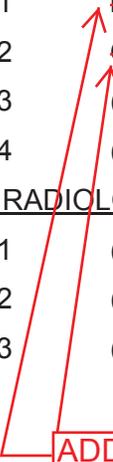


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"(DELETED)"



DEFINITIONS

\bar{E} AVERAGE DISINTEGRATION ENERGY

- 1.12 \bar{E} shall be the average, weighted in proportion to the concentration of each radionuclide in the reactor coolant at the time of sampling, of the sum of the average beta and gamma energies per disintegration (MeV/d) for isotopes, with half-lives greater than 15 minutes, making up at least 95% of the total non-iodine activity in the coolant.

ENGINEERED SAFETY FEATURES RESPONSE TIME

- 1.13 The ENGINEERED SAFETY FEATURES (ESF) RESPONSE TIME shall be that time interval from when the monitored parameter exceeds its ESF Actuation Setpoint at the channel sensor until the ESF equipment is capable of performing its safety function (i.e., the valves travel to their required positions, pump discharge pressures reach their required values, etc.). Times shall include diesel generator starting and sequence loading delays where applicable. The response time may be measured by means of any series of sequential, overlapping, or total steps so that the entire response time is measured. In lieu of measurement, response time may be verified for selected components provided that the components and the methodology for verification have been previously reviewed and approved by the NRC.

EXCLUSION AREA BOUNDARY

- 1.14 The EXCLUSION AREA BOUNDARY shall be that line beyond which the land is not controlled by the licensee to limit access.

FREQUENCY NOTATION

- 1.15 The FREQUENCY NOTATION specified for the performance of Surveillance Requirements shall correspond to the intervals defined in Table 1.1.

~~GASEOUS RADWASTE TREATMENT SYSTEM~~

- 1.16 ~~A GASEOUS RADWASTE TREATMENT SYSTEM is any system designed and installed to reduce radioactive gaseous effluents by collecting primary coolant system off gases from the primary system and providing for delay or holdup for the purpose of reducing the total radioactivity prior to release to the environment.~~

IDENTIFIED LEAKAGE

- 1.17 IDENTIFIED LEAKAGE shall be:

- a. Leakage (except CONTROLLED LEAKAGE) into closed systems, such as pump seal or valve packing leaks that are captured and conducted to a sump or collecting tank, or
- b. Leakage into the containment atmosphere from sources that are both specifically located and known either not to interfere with the operation of Leakage Detection Systems or not to be PRESSURE BOUNDARY LEAKAGE, or
- c. Reactor Coolant System leakage through a steam generator to the Secondary Coolant System (primary-to-secondary leakage).

ADD:
"(DELETED)"

RADIOACTIVE EFFLUENTS
LIQUID HOLDUP TANKS*

ADD:
"- DELETED."

LIMITING CONDITION FOR OPERATION

- ~~3.11.1.4 The quantity of radioactive material contained in each of the following unprotected outdoor tanks shall be limited to less than or equal to 10 Curies, excluding tritium and dissolved or entrained noble gases:~~
- ~~a. Outside temporary tank, excluding demineralizer vessels and liners used to solidify or to dewater radioactive wastes.~~

~~APPLICABILITY: At all times.~~

ACTION:

- ~~a. With the quantity of radioactive material in any of the above listed tanks exceeding the above limit, immediately suspend all additions of radioactive material to the tank, within 48 hours reduce the tank contents to within the limit, and describe the events leading to this condition in the next Annual Radioactive Effluent Release Report, pursuant to Specification 6.9.1.4.~~
- ~~b. The provisions of Specification 3.0.3 are not applicable.~~

SURVEILLANCE REQUIREMENTS

- ~~4.11.1.4 The quantity of radioactive material contained in each of the above listed tanks shall be determined to be within the above limit by analyzing a representative sample of the tank's contents within 7 days following any addition of radioactive material to the tank.~~

~~*Tanks included in this specification are those outdoor tanks that are not surrounded by liners, dikes, or walls capable of holding the tank contents and that do not have tank overflows and surrounding area drains connected to the Liquid Radwaste Treatment System.~~

RADIOACTIVE EFFLUENTS
EXPLOSIVE GAS MIXTURE

ADD:
"- DELETED."



LIMITING CONDITION FOR OPERATION

~~3.11.2.5 The concentration of oxygen in the GASEOUS RADWASTE TREATMENT SYSTEM downstream of the hydrogen recombiners shall be limited to less than or equal to 2% by volume whenever the hydrogen concentration exceeds 4% by volume.~~

~~APPLICABILITY: At all times.~~

ACTION:

- ~~a. With the concentration of oxygen in the GASEOUS RADWASTE TREATMENT SYSTEM downstream of the hydrogen recombiners greater than 2% by volume but less than or equal to 4% by volume, reduce the oxygen concentration to the above limits within 48 hours.~~
- ~~b. With the concentration of oxygen in the GASEOUS RADWASTE TREATMENT SYSTEM downstream of the hydrogen recombiners greater than 4% by volume and the hydrogen concentration greater than 4% by volume, immediately suspend all additions of waste gases to the system and reduce the concentration of oxygen to less than or equal to 4% by volume, then take ACTION a., above.~~
- ~~c. The provisions of Specification 3.0.3 are not applicable.~~

SURVEILLANCE REQUIREMENTS

~~4.11.2.5 The concentrations of hydrogen and oxygen in the GASEOUS RADWASTE TREATMENT SYSTEM shall be determined to be within the above limits by monitoring, at least once per 12 hours, the waste gases in the GASEOUS RADWASTE TREATMENT SYSTEM.~~



ADMINISTRATIVE CONTROLS

PROCEDURES AND PROGRAMS (Continued)

h. Radioactive Effluent Controls Program (Cont.)

- 8) Limitations on the annual and quarterly air doses resulting from noble gases released in gaseous effluents to areas beyond the SITE BOUNDARY conforming to Appendix I to 10 CFR Part 50,
- 9) Limitations on the annual and quarterly doses to a MEMBER OF THE PUBLIC from Iodine 131, Iodine 133, tritium, and all radionuclides in particulate form with half-lives greater than 8 days in gaseous effluents released to areas beyond the SITE BOUNDARY conforming to Appendix I to 10 CFR Part 50, and
- 10) Limitations on the annual dose or dose commitment to any MEMBER OF THE PUBLIC due to releases of radioactivity and to radiation from uranium fuel cycle sources conforming to 40 CFR Part 190.

i. Radiological Environmental Monitoring Program

A program shall be provided to monitor the radiation and radionuclides in the environs of the plant. The program shall provide (1) representative measurements of radioactivity in the highest potential exposure pathways, and (2) verification of the accuracy of the effluent monitoring program and modeling of environmental exposure pathways. The program shall (1) be contained in the ODCM, (2) conform to the guidance of Appendix I to 10 CFR Part 50, and (3) include the following:

- 1) Monitoring, sampling, analysis, and reporting of radiation and radionuclides in the environment in accordance with the methodology and parameters in the ODCM,
- 2) A Land Use Census to ensure that changes in the use of areas at and beyond the SITE BOUNDARY are identified and that modifications to the monitoring program are made if required by the results of this census, and
- 3) Participation in a Interlaboratory Comparison Program to ensure that independent checks on the precision and accuracy of the measurements of radioactive materials in environmental sample matrices are performed as part of the quality assurance program for environmental monitoring.

j. Gas Storage Tank Radioactivity Monitoring Program

~~A program shall be provided for the control of the quantity of radioactivity contained in gas storage tanks. The gaseous radioactivity quantities shall be determined following the methodology in Branch Technical Position (BTP) ETSB 11-5, "Postulated Radioactive Release due to Waste Gas System Leak or Failure."~~

~~The program shall include surveillance provisions to ensure that the quantity of radioactivity contained in each gas storage tank is less than the amount that would result in a whole body exposure of ≥ 0.5 rem to any individual in an unrestricted area, in the event of an uncontrolled release of the tanks' contents.~~

< INSERT >



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Explosive Gas and Storage Tank Radioactivity Monitoring Program

This program provides controls for potentially explosive gas mixtures contained in the Gaseous Waste Processing System (GWPS), the quantity of radioactivity contained in gas storage tanks, and the quantity of radioactivity contained in unprotected outdoor liquid storage tanks. The gaseous radioactivity quantities shall be determined following the methodology in Branch Technical Position (BTP) ETSB 11-5, "Postulated Radioactive Release due to Waste Gas System Leak or Failure."

The program shall include:

- 1) The limits for concentrations of hydrogen and oxygen in the GWPS and a surveillance program to ensure the limits are maintained. Such limits shall be appropriate to the system's design criteria (i.e., whether or not the system is designed to withstand a hydrogen explosion),
- 2) A surveillance program to ensure that the quantity of radioactivity contained in each gas storage tank is less than the amount that would result in a whole body exposure of ≥ 0.5 rem to any individual in an unrestricted area, in the event of an uncontrolled release of the tanks' contents.
- 3) A surveillance program to ensure that the quantity of radioactivity contained in all outdoor liquid radwaste tanks that are not surrounded by liners, dikes, or walls, capable of holding the tanks' contents and that do not have tank overflows and surrounding area drains connected to the Liquid Waste Processing System is less than the amount that would result in concentrations less than the limits of 10 CFR 20, Appendix B, Table 2, Column 2, at the nearest potable water supply and the nearest surface water supply in an unrestricted area, in the event of an uncontrolled release of the tanks' contents.

The provisions of SR 4.0.2 and SR 4.0.3 are applicable to the Explosive Gas and Storage Tank Radioactivity Monitoring Program surveillance frequencies.

U.S. Nuclear Regulatory Commission
Serial HNP-16-050
Attachment 3

HNP-16-050

ATTACHMENT 3

REVISED TECHNICAL SPECIFICATION PAGES

SHEARON HARRIS NUCLEAR POWER PLANT / UNIT 1

DOCKET NO. 50-400

RENEWED LICENSE NUMBER NPF-063

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DEFINITIONS

\bar{E} AVERAGE DISINTEGRATION ENERGY

- 1.12 \bar{E} shall be the average, weighted in proportion to the concentration of each radionuclide in the reactor coolant at the time of sampling, of the sum of the average beta and gamma energies per disintegration (MeV/d) for isotopes, with half-lives greater than 15 minutes, making up at least 95% of the total non-iodine activity in the coolant.

ENGINEERED SAFETY FEATURES RESPONSE TIME

- 1.13 The ENGINEERED SAFETY FEATURES (ESF) RESPONSE TIME shall be that time interval from when the monitored parameter exceeds its ESF Actuation Setpoint at the channel sensor until the ESF equipment is capable of performing its safety function (i.e., the valves travel to their required positions, pump discharge pressures reach their required values, etc.). Times shall include diesel generator starting and sequence loading delays where applicable. The response time may be measured by means of any series of sequential, overlapping, or total steps so that the entire response time is measured. In lieu of measurement, response time may be verified for selected components provided that the components and the methodology for verification have been previously reviewed and approved by the NRC.

EXCLUSION AREA BOUNDARY

- 1.14 The EXCLUSION AREA BOUNDARY shall be that line beyond which the land is not controlled by the licensee to limit access.

FREQUENCY NOTATION

- 1.15 The FREQUENCY NOTATION specified for the performance of Surveillance Requirements shall correspond to the intervals defined in Table 1.1.
- 1.16 (DELETED)

IDENTIFIED LEAKAGE

- 1.17 IDENTIFIED LEAKAGE shall be:
- a. Leakage (except CONTROLLED LEAKAGE) into closed systems, such as pump seal or valve packing leaks that are captured and conducted to a sump or collecting tank, or
 - b. Leakage into the containment atmosphere from sources that are both specifically located and known either not to interfere with the operation of Leakage Detection Systems or not to be PRESSURE BOUNDARY LEAKAGE, or
 - c. Reactor Coolant System leakage through a steam generator to the Secondary Coolant System (primary-to-secondary leakage).

RADIOACTIVE EFFLUENTS
LIQUID HOLDUP TANKS - DELETED

RADIOACTIVE EFFLUENTS
EXPLOSIVE GAS MIXTURE - DELETED

|

PROCEDURES AND PROGRAMS (Continued)

h. Radioactive Effluent Controls Program (Cont.)

- 8) Limitations on the annual and quarterly air doses resulting from noble gases released in gaseous effluents to areas beyond the SITE BOUNDARY conforming to Appendix I to 10 CFR Part 50,
- 9) Limitations on the annual and quarterly doses to a MEMBER OF THE PUBLIC from Iodine 131, Iodine 133, tritium, and all radionuclides in particulate form with half-lives greater than 8 days in gaseous effluents released to areas beyond the SITE BOUNDARY conforming to Appendix I to 10 CFR Part 50, and
- 10) Limitations on the annual dose or dose commitment to any MEMBER OF THE PUBLIC due to releases of radioactivity and to radiation from uranium fuel cycle sources conforming to 40 CFR Part 190.

i. Radiological Environmental Monitoring Program

A program shall be provided to monitor the radiation and radionuclides in the environs of the plant. The program shall provide (1) representative measurements of radioactivity in the highest potential exposure pathways, and (2) verification of the accuracy of the effluent monitoring program and modeling of environmental exposure pathways. The program shall (1) be contained in the ODCM, (2) conform to the guidance of Appendix I to 10 CFR Part 50, and (3) include the following:

- 1) Monitoring, sampling, analysis, and reporting of radiation and radionuclides in the environment in accordance with the methodology and parameters in the ODCM,
- 2) A Land Use Census to ensure that changes in the use of areas at and beyond the SITE BOUNDARY are identified and that modifications to the monitoring program are made if required by the results of this census, and
- 3) Participation in a Interlaboratory Comparison Program to ensure that independent checks on the precision and accuracy of the measurements of radioactive materials in environmental sample matrices are performed as part of the quality assurance program for environmental monitoring.

j. Explosive Gas and Storage Tank Radioactivity Monitoring Program

This program provides controls for potentially explosive gas mixtures contained in the Gaseous Waste Processing System (GWPS), the quantity of radioactivity contained in gas storage tanks, and the quantity of radioactivity contained in unprotected outdoor liquid storage tanks. The gaseous radioactivity quantities shall be determined following the methodology in Branch Technical Position (BTP) ETSB 11-5, "Postulated Radioactive Release due to Waste Gas System Leak or Failure."

The program shall include:

- 1) The limits for concentrations of hydrogen and oxygen in the GWPS and a surveillance program to ensure the limits are maintained. Such limits shall be appropriate to the system's design criteria (i.e., whether or not the system is designed to withstand a hydrogen explosion).

ADMINISTRATIVE CONTROLS

PROCEDURES AND PROGRAMS (Continued)

- j. Explosive Gas and Storage Tank Radioactivity Monitoring Program (Cont.)
- 2) A surveillance program to ensure that the quantity of radioactivity contained in each gas storage tank is less than the amount that would result in a whole body exposure of ≥ 0.5 rem to any individual in an unrestricted area, in the event of an uncontrolled release of the tanks' contents.
 - 3) A surveillance program to ensure that the quantity of radioactivity contained in all outdoor liquid radwaste tanks that are not surrounded by liners, dikes, or walls, capable of holding the tanks' contents and that do not have tank overflows and surrounding area drains connected to the Liquid Waste Processing System is less than the amount that would result in concentrations less than the limits of 10 CFR 20, Appendix B, Table 2, Column 2, at the nearest potable water supply and the nearest surface water supply in an unrestricted area, in the event of an uncontrolled release of the tanks' contents.

The provisions of SR 4.0.2 and SR 4.0.3 are applicable to the Explosive Gas and Storage Tank Radioactivity Monitoring Program surveillance frequencies.

U.S. Nuclear Regulatory Commission
Serial HNP-16-050
Attachment 4

HNP-16-050

ATTACHMENT 4

PROPOSED TECHNICAL SPECIFICATION BASES CHANGES

SHEARON HARRIS NUCLEAR POWER PLANT / UNIT 1

DOCKET NO. 50-400

RENEWED LICENSE NUMBER NPF-063

(FOR INFORMATION ONLY)

3/4.11 RADIOACTIVE EFFLUENTS

BASES

3/4.11.1 LIQUID EFFLUENTS

3/4.11.1.1 DELETED

3/4.11.1.2 DELETED

3/4.11.1.3 DELETED

3/4.11.1.4 ~~LIQUID HOLDUP TANKS~~

ADD:
"DELETED"

~~The tanks listed in this specification include all those outdoor radwaste tanks that are not surrounded by liners, dikes, or walls capable of holding the tank contents and that do not have tank overflows and surrounding area drains connected to the Liquid Radwaste Treatment System.~~

~~Restricting the quantity of radioactive material contained in the specified tanks provides assurance that in the event of an uncontrolled release of the tank's contents, the resulting concentrations would be less than the limits of 10 CFR Part 20, Appendix B, Table II, Column 2, at the nearest potable water supply and the nearest surface water supply in an UNRESTRICTED AREA.~~

3/4.11.2 GASEOUS EFFLUENTS

3/4.11.2.1 DELETED

3/4.11.2.2 DELETED

3/4.11.2.3 DELETED

3/4.11.2.4 DELETED

3/4.11.2.5 ~~EXPLOSIVE GAS MIXTURE~~

ADD:
"DELETED"

~~This specification is provided to ensure that the concentration of potentially explosive gas mixtures contained in the GASEOUS RADWASTE TREATMENT SYSTEM downstream of the hydrogen recombiners is maintained below the flammability limits of hydrogen and oxygen. Automatic control features are included in the system to prevent the hydrogen and oxygen concentrations from reaching these flammability limits. These automatic control features include isolation of the source of oxygen to reduce the concentration below the flammability limits. Maintaining the concentration of hydrogen and oxygen below their flammability limits provides assurance that the releases of radioactive materials will be controlled in conformance with the requirements of General Design Criterion 60 of Appendix A to 10 CFR Part 50.~~