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10CFR50.90

April 2, 2001

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

Clinton Power Station, Unit 1
Facility Operating License No. NPF-62
NRC Docket No. 50-461

Subject: Request for Amendment to Technical Specifications to Permit Inclined Fuel Transfer System Blind Flange Removal During Power Operations

References:
(1) Letter U-602587 from W. Connell (Illinois Power) to U.S. NRC, "Clinton Power Station Proposed Amendment of Facility Operating License No. NPF-62 (LS-96-006)," dated June 28, 1996.
(2) Letter U-602628 from W. Connell (Illinois Power) to U.S. NRC, "Clinton Power Station Revision to Proposed Amendment of Operating License No. NPF-62 (LS-96-003) and Response to Related Request for Additional Information," dated September 17, 1996.
(3) Letter from D. Pickett (U.S. NRC) to R. Phares (Illinois Power), "Issuance of Amendment No. 107 to Facility Operating License No. NPF-62 – Clinton Power Station, Unit 1 (TAC No. M95826)," dated October 3, 1996.
(4) Letter U-603422 from P. Hinnenkamp (AmerGen) to U.S. NRC, "Clinton Power Station Inclined Fuel Transfer System Blind Flange Removal and Storage of New Fuel In Upper Containment Fuel Storage Pool During Power Operations," dated October 2, 2000.

In accordance with 10 CFR 50.90, "Application for amendment of license or construction permit," AmerGen Energy Company, LLC (i.e., AmerGen), proposes changes to Appendix A, Technical Specifications (TS), of Facility Operating License No. NPF-62 for the Clinton Power Station (CPS). The proposed changes are to TS Section 3.6.1.3, "Primary Containment Isolation Valves (PCIVs)." Specifically, AmerGen requests the addition of a conditional note (i.e., Note 5) before the Actions for TS Section 3.6.1.3, which will identify the controls required for allowing the Inclined Fuel Transfer System (IFTS) blind flange to be removed during Modes 1, "Power Operation," 2, "Startup," or 3, "Hot Shutdown."

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In Reference (1), we proposed changes to TS Section 3.6.1.3 Surveillance Requirement (SR) 3.6.1.3.3. These changes consisted of the addition of a conditional note (i.e., Note 3) which indicated the SR was not required when the IFTS blind flange was removed under certain conditions. The proposed wording of the note was subsequently revised in Reference (2). The NRC, in Reference (3), issued Amendment 107 to CPS approving the addition of Note 3 to the surveillance requirement and allowing removal of the IFTS blind flange when primary containment integrity is required.

However, as noted in Reference 4, Amendment 107 did not identify a particular time limitation on how long the flange could be removed during power operations nor did it allow removal of the flange for any purpose other than maintenance and testing. While we did require certain administrative controls be met with the flange removed and the opening of the IFTS flange during power operation was not intended to be a long-term configuration, TS Section 3.6.1.3 Limiting Condition for Operation (LCO) does not provide a limit for the time the flange can be removed. Concerns were also identified with the potential for leakage of water from the containment upper pool through the IFTS transfer tube affecting the required upper pool dump volume since the administrative controls did not require the installation of the Steam Dryer Pool to Reactor Cavity Pool gate. In addition, we intend to move new fuel to the upper containment fuel storage pool using IFTS prior to the start of future refueling outages in a manner similar to that used prior to the last CPS refueling outage. In order to perform this evolution in preparation for a refueling outage the IFTS blind flange must be removed. The purpose of this proposed change is to provide the required limitation on the duration that the IFTS blind flange can be removed while primary containment integrity is required, specify the need to install the Steam Dryer Pool to Reactor Cavity Pool gate prior to opening the blind flange, and provide the flexibility to remove the IFTS blind flange for other than maintenance and testing purposes only. We request approval of this change prior to December 31, 2001, in order to support preparation for the next refueling outage.

This request is subdivided as follows.

1. Attachment A gives a description and safety analysis of the proposed changes.

2. Attachment B includes the marked-up TS pages with the requested changes indicated and a marked-up copy of the affected pages from the current TS Bases provided for information only.

3. Attachment C describes our evaluation performed using the criteria in 10 CFR 50.91, "Notice for public comment; State consultation," paragraph (a)(1) which provides information supporting a finding of no significant hazards consideration in accordance with 10 CFR 50.92, "Issuance of amendment," paragraph (c).

4. Attachment D provides information supporting an Environmental Assessment.

This proposed change has been reviewed by the CPS Plant Operations Review Committee and approved by the Nuclear Safety Review Board.

AmerGen is notifying the State of Illinois of this application for changes to the TS by transmitting a copy of this letter and its attachments to the designated State Official.

Should you have any questions concerning this letter, please contact Mr. T. A. Byam at (630) 663-7266.

Respectfully,

J. M. Heffley
Vice President
Clinton Power Station

TAB/RWC/krk

Attachments:
Affidavit
Attachment A: Description and Safety Analysis for Proposed Change
Attachment B: Marked-up Pages for Proposed Change
Attachment C: Information Supporting a Finding of No Significant Hazards Consideration
Attachment D: Information Supporting An Environmental Assessment

cc: Regional Administrator - NRC Region III
NRC Senior Resident Inspector – Clinton Power Station
Office of Nuclear Facility Safety - Illinois Department of Nuclear Safety

STATE OF ILLINOIS	)	
COUNTY OF DEWITT	)	
IN THE MATTER OF	)	
AMERGEN ENERGY COMPANY, LLC	)	Docket Number
CLINTON POWER STATION, UNIT 1	)	50-461

SUBJECT: **Request for Amendment to Technical Specifications to Permit Inclined Fuel Transfer System Blind Flange Removal During Power Operations**

AFFIDAVIT

I affirm that the content of this transmittal is true and correct to the best of my knowledge, information and belief.

J. M. Heffley
Vice President
Clinton Power Station

Subscribed and sworn to before me, a Notary Public in and

for the State above named, this 2nd day of

April, 2001.

Notary Public

" OFFICIAL SEAL "
Jacqueline S. Matthias
Notary Public, State of Illinois
My Commission Expires 11/24/2001

DESCRIPTION AND SAFETY ANALYSIS FOR THE PROPOSED CHANGES

A. SUMMARY OF THE PROPOSED CHANGES

In accordance with 10 CFR 50.90, "Application for amendment of license or construction permit," AmerGen Energy Company, LLC (i.e., AmerGen), proposes changes to Appendix A, Technical Specifications (TS), of Facility Operating License No. NPF-62. Specifically, we propose to add a conditional Note to the Actions associated with TS Section 3.6.1.3, "Primary Containment Isolation Valves (PCIVs)." This note will provide required conditions for removing the Inclined Fuel Transfer System (IFTS) blind flange during power operation including a time limit on how long the blind flange can be removed when primary containment integrity is required and the requirement for installation of the Steam Dryer Pool to Reactor Cavity Pool gate. Additionally, conditional Note 3, previously added to TS Section 3.6.1.3 Surveillance Requirement (SR) 3.6.1.3.3 in Amendment 107 (Reference 1), will be deleted since it will be redundant to the proposed new note and does not reflect the need to remove the blind flange for reasons other than system maintenance and testing.

The proposed changes are described in Section E of this Attachment. The marked-up TS pages are shown in Attachment B.

B. DESCRIPTION OF THE CURRENT REQUIREMENTS

TS Section 3.6.1.3 requires that each PCIV be operable in Modes 1, "Power Operation," 2, "Startup," and 3, "Hot Shutdown." The isolation devices addressed by this Limiting Condition for Operation (LCO) consist of either passive devices or active (i.e., automatic) devices. Manual valves, de-activated automatic valves, secured in their closed position, check valves with flow through the valve secured, and blind flanges are considered passive devices. Check valves and automatic valves, designed to close without operator action following an accident, are considered active devices.

TS SR 3.6.1.3.3 requires the verification that each primary containment isolation manual valve and blind flange located in the primary containment, drywell or steam tunnel required to be closed during accident conditions is closed. This SR is required to be performed prior to entering Mode 2 or 3 from Mode 4, "Cold Shutdown," if it has not been performed in the previous 92 days. As part of Amendment 107 (Reference 1), a conditional note was added to SR 3.6.1.3.3 to allow removal of the IFTS blind flange for maintenance or testing when primary containment operability is required provided certain administrative controls are met.

C. BASES FOR THE CURRENT REQUIREMENTS

The function of the PCIVs, in combination with other accident mitigation systems, is to limit fission product release during and following postulated Design Basis Accidents (DBAs) to within analyzed limits. Primary containment isolation within the time limits specified for those PCIVs designed to close automatically ensures that the release of

radioactive material to the environment will be consistent with the assumptions used in the analyses for a DBA.

The operability requirements for PCIVs, as required by TS Section 3.6.1.3, ensure that an adequate primary containment boundary is maintained during and after an accident by minimizing potential paths to the environment. Therefore, the operability requirements provide assurance that the primary containment function assumed in the safety analysis will be maintained. TS Section 3.6.1.3 LCO was derived from the assumptions related to minimizing the loss of reactor coolant inventory, and establishing the primary containment boundary during major accidents. As part of the primary containment boundary, PCIV operability supports leak tightness of primary containment.

The power operated isolation valves are required to have isolation times within specified limits and are required to actuate on an automatic isolation signal to be operable. The normally closed PCIVs are considered operable when, as applicable, manual valves are closed or open in accordance with appropriate administrative controls, automatic valves are deactivated or secured in their closed position, or blind flanges are in place.

TS SR 3.6.1.3.3 ensures that post accident leakage of radioactive fluids or gases outside the primary containment boundary is within design limits. A third note was added to this surveillance requirement by Amendment 107 (Reference 1) to allow removal of the IFTS blind flange when primary containment operability is required. This note provides the option of operating the IFTS system for testing and maintenance when primary containment integrity is required by identifying the required conditions that need to be in place prior to removing the IFTS blind flange. These conditions ensure that there is a sufficient depth of water in the fuel building fuel transfer pool to prevent direct communication between the primary containment atmosphere and the fuel building atmosphere via the inclined fuel transfer tube. In addition, administrative control of the IFTS transfer tube drain line isolation valve(s) ensures the drain line flow path is quickly isolable in the event of a LOCA. The pressure integrity of the IFTS transfer tube, the seal created by water depth of the fuel building fuel transfer pool, and the administrative control of the drain line flow path create an acceptable barrier to prevent the post-accident primary containment atmosphere from leaking into the fuel building. However, even if containment atmosphere were to leak into the fuel building, it would be contained within the boundaries of the secondary containment and filtered by the Standby Gas Treatment System prior to release to the environment.

D. NEED FOR REVISION OF THE REQUIREMENTS

The NRC issued Amendment 107 to the CPS Operating License on October 3, 1996, approving removal of the IFTS primary containment blind flange while primary containment integrity is required. The original basis for this amendment was to provide flexibility to operate the IFTS for the purpose of testing and exercising the system prior to a refueling outage. In accordance with that amendment, no specific time limit on how long the flange could be removed was imposed. In addition, as noted above, the NRC issued License Amendment 107 on the basis that the IFTS flange may be opened during plant operation for maintenance and testing purposes only. However, prior to the fall 2000 refueling outage the need for moving new fuel to the upper containment fuel storage pool in preparation for the refueling outage was identified. To use IFTS for this

purpose requires that the blind flange be removed. Therefore, we are proposing changes to the TS to identify the required time limit that the blind flange may be removed during Modes 1, 2, or 3 and to allow for removal of the IFTS blind flange for transferring new fuel to the upper containment fuel storage pool in preparation for a refueling outage as well as for testing and maintenance.

E. DESCRIPTION OF THE PROPOSED CHANGES

The proposed TS changes are as follows.

1. Add conditional note (i.e., Note 5) to the Actions associated with TS Section 3.6.1.3 which identifies the conditions under which the IFTS blind flange can be removed when primary containment integrity is required. This note will include the need to maintain the fuel building fuel transfer pool level at a certain height, a limit on how long the blind flange can be removed during power operation in a given operating cycle, the need for installation of the Steam Dryer Pool to Reactor Cavity Pool gate, and all other administrative controls to support flange removal.

2. Delete the conditional note (i.e., Note 3) from the surveillance requirement SR 3.6.1.3.3 which was added in Amendment 107.

3. Changes to the TS Bases consistent with the above changes to TS Section 3.6.1.3.

The proposed TS changes are reflected on a marked-up copy of the affected pages from the CPS TS contained in Attachment B. A marked-up copy of the affected pages from the current TS Bases is also provided in Attachment B. Following NRC approval of this request, we will revise the CPS TS Bases, in accordance with the TS Bases Control Program of TS Section 5.5.11, to incorporate the changes identified in Attachment B.

F. SAFETY ANALYSIS OF THE PROPOSED CHANGES

The IFTS at CPS (Figure 1) is used to transfer fuel assemblies, control rods, defective fuel storage containers, and other small items between the pool in upper primary containment and the lower-elevation pool in the adjacent fuel building (i.e., secondary containment) by means of a carriage traveling in an inclined transfer tube. The IFTS is a fixed installation, consisting of the inclined fuel transfer tube, upper and lower upenders, hydraulic power units, an electrically powered winch, carriage, and instrumentation required for the control system that includes redundant inputs for status indicators, and both a manual and semi-automatic programmable computer control facility.

The transfer tube (Figure 1, Item 20) is a 23-inch internal diameter stainless steel pipe, and provides a sealable, enclosed path for the carriage which is lowered and raised by means of a winch assembly. In the primary containment pool (i.e., upper pool), the transfer tube connects to the pool penetration and to a sheave box. The position of the carriage in the tube is tracked by a calibrated position system. The transfer tube is suspended between two flexible seals, or bellows. The transfer tube includes a valve at both ends, and is provided with a primary containment isolation assembly. The valve at the upper end, known as the flap valve (Figure 1, item 11), consists of a 24-inch disc with an actuating cylinder (Figure 1, item 12) and is mounted on the sheave box (Figure

1, item 14). The lower end has a 24-inch hydraulically operated gate valve (Figure 1, item 25).

The primary containment isolation assembly consists of two pipe spools separated by a removable blind flange (Figure 1, item 18) that is connected to the primary containment penetration via a flexible metal bellows (Figure 1, item 19). The blind flange normally forms a part of the primary containment boundary. Before the IFTS can be placed in operation, the containment isolation assembly must be disassembled and the flange replaced with a gasketed ring, and reassembled. The spring hanger and snubbers (Figure 1, item 22) at the mid-section of the transfer tube provide support and seismic restraint for the system. At the connection of the two transfer tube sections, the 4-inch drain line and the "tube-drained" liquid level sensors are installed.

The drain line contains an automatic isolation valve (Figure 1, item 27) and provides a means of lowering the water level in the transfer tube prior to transferring the carriage and its contents to the lower pool. Water drained out of the transfer tube is directed to one of the Fuel Pool Cooling and Cleanup System surge tanks where it is reintroduced to the pool systems. While draining, the transfer tube is vented to the primary containment atmosphere through the vent pipe (Figure 1, item 4) attached to the sheave box at the top of the transfer tube. The winch cable enclosure pipes (Figure 1, item 5) attached to the sheave box provide a path for the winch to raise and lower the carriage within the transfer tube while preventing upper pool water from entering the drained transfer tube.

In the lower pool, a bellows (Figure 1, item 26) connects the pool wall penetration to the 24-inch hydraulically operated gate valve (Figure 1, item 25) and to the transfer tube, thus preventing water entrapment between the transfer tube (Figure 1, item 20) and the lower pool penetration sleeve while still allowing axial movement of the transfer tube. Transfer tube axial movement is required to allow the installation and removal of the blind flange near the upper end of the transfer tube. The transfer tube lower valve (Figure 1, item 25) is cradled within a valve support structure (Figure 1, item 29) in the lower pool.

After transfer operations are completed, containment isolation is effected as follows:

1. The manual gate valve (Figure 1, item 17) is closed.
2. Bolts are removed from the containment isolation assembly as required to allow insertion of the blind flange (Figure 1, item 18).
3. The transfer tube (Figure 1, item 20) is lowered with the hydraulic cylinders (Figure 1, item 16).
4. The blind flange is inserted and bolts are installed.
5. The transfer tube is pulled up with the cylinders (Figure 1, item 16).
6. The bolts are tightened and the pressure on the cylinders (Figure 1, item 16) is relieved.

With respect to the IFTS and its associated containment penetration, containment operability is made by the blind flange (Figure 1, item 18), containment bellows (Figure 1, item 19), and the steel containment penetration. Special gaskets are provided for leak checking to assure containment isolation. Installation of the blind flange is the normal

method for ensuring primary containment isolation is effected for the IFTS. However, as approved by the NRC in Amendment 107 (Reference 1), adequate isolation of the IFTS containment penetration is achieved by taking credit for the fact that the IFTS transfer tube terminates deep in the fuel building fuel transfer pool. The conditional note approved in Reference (1) and the proposed note described above require that the fuel building fuel transfer pool level be maintained at a certain height. This requirement is implemented by plant procedure. Maintaining a high level of water above the lower end of the IFTS tube effectively seals the tube and precludes it from becoming a potential leak path for containment atmosphere into the fuel building in the event of a design basis accident. This provided a basis for permitting the flange to be removed to support IFTS testing and maintenance during plant operation.

AmerGen proposed changes to SR 3.6.1.3.3 in Reference (2) and provided additional information in support of this amendment request in Reference (3). These two submittals provided the basis for justifying the removal of the IFTS blind flange in Modes 1, 2, or 3 as approved in Amendment 107 (Reference 1). These submittals documented the evaluation of the IFTS system to withstand the pressures associated with the large break loss of coolant accident (LOCA). While the IFTS tube and its appurtenances have not been fabricated or installed to meet the acceptance criteria for a primary containment penetration, the evaluation addressed the ability of the structure itself to withstand the design basis pressures as well as the ability of the water seal to withstand the 9 psig pressure associated with the large break LOCA. In summary, these submittals demonstrated that no components will be pressurized to a pressure greater than their allowable value and the static head provided by the fuel building transfer pool water is sufficient to prevent open communication of primary containment atmosphere to the fuel building (i.e., secondary containment) atmosphere. The NRC review of these submittals provided the basis for their approval of Reference (1).

Additional analysis has been performed to evaluate the impact of a small break LOCA on the ability of the IFTS to prevent communication between the primary containment atmosphere and the fuel building. Updated Safety Analysis Report (USAR) Figure 6.2-20 shows that for the small break LOCA the containment pressure reaches approximately 15 psig. This result is presented in the USAR for the purpose of demonstrating that the containment design pressure limit is not exceeded during an accident. The small break LOCA peak containment pressure is capable of generating an equivalent head of water in excess of the static head associated with the normal water level in the fuel building fuel transfer pool. However, qualitative evaluation of the effects of the small break LOCA pressure has indicated that the quantity of inventory lost will be insignificant based on the relatively short duration the containment pressure exceeds the static head associated with the normal fuel transfer pool level. In addition, the small break LOCA is not limiting from a dose perspective since no fuel damage is expected to occur for such an event and minimal release of radioactive material (i.e., the radioactive material remains in the primary coolant) inside primary containment is expected.

The most limiting event with respect to dose, and which also results in the pressurization of the containment, is the large break LOCA. Although the peak containment pressure associated with this event is less than the value that may be reached for the small break LOCA case, the large break LOCA represents the limiting event with regard to the

containment function and potential dose consequences. Accordingly, the large break LOCA is the recognized design basis event that establishes the leakage limits for the CPS primary containment in accordance with the requirements of 10 CFR 50, "Domestic Licensing of Production and Utilization Facilities," Appendix J, "Primary Reactor Containment Leakage Testing for Water-Cooled Power Reactors." Based on the above, the IFTS was evaluated as a potential containment leakage pathway at an accident pressure of 9 psig, consistent with all of the other containment leakage pathways, including the primary containment isolation valves. This evaluation determined that the IFTS provides an adequate barrier at the accident pressure.

As described above and documented in References (2) and (3), the removal of the IFTS blind flange will not result in open communication between the primary containment atmosphere and the fuel building (i.e., secondary containment) atmosphere even at the pressures resulting from a DBA. However, when the transfer tube is in the drained condition, the transfer tube drain line connects the primary containment atmosphere to the Fuel Pool Cooling and Cleanup System surge tank piping in the fuel building. This could potentially result in the bypassing of the water seal created by the fuel building fuel transfer pool. As documented in References (2) and (3), the evolutions where the drain lines are opened are of a relatively short duration and a dedicated individual, who is in continuous communication with the control room, will be stationed at the IFTS control panel in the fuel building to initiate closure of the IFTS transfer tube drain line isolation valve(s) if a need for primary containment isolation is indicated. The short duration of this evolution and the administrative control provided by the dedicated individual will be in effect to ensure that the transfer tube drain line can be rapidly isolated. These controls are identified in the Bases for the proposed note to TS Section 3.6.1.3 Actions and are consistent with Amendment 107.

If a large break LOCA were to occur while the water seal was bypassed, the resulting primary containment pressure will be less than the design pressure of the piping and components that form the extension of the primary containment boundary. Therefore, no components will be pressurized to a pressure greater than their allowable value. All potential leakage pathways created by this proposed change, and consistent with Amendment 107, are either water sealed or administratively controlled as described above. Since the water seal and the administrative controls of the IFTS transfer tube drain line ensure that there would be no additional leakage from this path, the proposed change does not challenge the capabilities of the Standby Gas Treatment System. The ability to isolate the potential leakage path by a water seal or administrative controls means that a release to the fuel building (i.e., secondary containment) that could affect the ability of personnel to perform safety functions associated with mitigating a postulated LOCA would not be expected. In addition, since the control of this pathway will be consistent with the administrative controls imposed on other primary containment penetrations associated with inoperable PCIVs, control of this potential leakage path will be consistent with the existing CPS licensing basis. In the unlikely event that a portion of the primary containment atmosphere were to be introduced to the fuel building, it would be within the boundaries of secondary containment and filtered by the Standby Gas Treatment System.

An evaluation was performed to determine if excessive leakage through the IFTS penetration could result in the overflow of the fuel building spent fuel pool. This

evaluation assumed that the maximum amount of water from the upper pools was lost through the IFTS transfer tube to the fuel building. This flooding event is bounded by the current plant flood analysis if inter-building flow occurs as assumed in the existing flood analysis. The existing flood analysis demonstrates that there is no impact on safe shutdown capability. If the water is contained within the fuel building, it would exceed the existing analyzed flood levels; however, it would not change the conclusion with respect to safe shutdown capability. The water contained in the upper containment pools, the spent fuel pool, and the fuel pool cooling and cleanup system is essentially demineralized water, so there is very little radiation associated with flooding from these volumes. In addition, the fuel building, as noted above, is within the secondary containment which is designed to prevent offsite release due to post LOCA conditions.

Leakage of the water from the containment upper pool through the IFTS transfer tube to the fuel building spent fuel pool was also evaluated for its impact on the Suppression Pool Makeup (SPMU) System. The function of the SPMU System is to transfer water from the upper containment pool to the suppression pool after a LOCA. The water transfer from the SPMU System ensures a post LOCA suppression pool vent coverage of greater than or equal to two feet above the top of the top row of LOCA vents so that long-term steam condensation is maintained. The required water dump volume from the upper containment pool is equal to the difference between the total post LOCA drawdown volume and the assumed water volume loss from the suppression pool. As stated in the Bases for TS LCO 3.6.2.4, this water volume is required to be $\geq$ 14,652 ft^3. Because excessive leakage of water from the upper containment pool would result in the inability to provide the required volume of water to the suppression pool in an upper pool dump, it was determined that an administrative control was required to ensure the upper pool water volume meets these design requirements. In addition to the dedicated individual stationed at the IFTS controls, these administrative controls include the requirement that the Steam Dryer Pool to Reactor Cavity Pool gate be installed with the seal inflated and a backup air supply provided. Installation of this gate separates the volume of water above the IFTS transfer tube from the volume of water available for the SPMU System ensuring the required water dump volume is available. These administrative controls are defined in the note added to TS Section 3.6.1.3 under this proposed change as well as in the governing plant procedure.

As stated above, License Amendment 107 did not define a time limit for how long the IFTS blind flange may be open while primary containment integrity is required. This Amendment was issued based on the fact that the IFTS blind flange would be removed for testing and maintenance purposes only. The NRC recognized that a satisfactory check of the entire IFTS may take several days, and stated that having the IFTS blind flange open for such testing and maintenance inspections during the last few weeks prior to a planned refueling outage is reasonable and acceptable. However, the need to transfer new fuel to the upper containment pool in preparation for the last refueling outage indicated that it may be necessary to remove the flange for longer durations than previously anticipated in References (2) and (3). As a result, it was determined to be necessary to specify a time limit on how long the blind flange could be removed. As documented in Reference (4), such a time limit was established and we have concluded that the established time limit (i.e., 40 days per operating cycle) does not affect the conclusions in the NRC's Safety Evaluation provided in Reference (1).

The use of IFTS to move new fuel to the upper containment pool in advance of a refueling outage was evaluated in Reference (4). This evaluation considered the transport of new fuel into the upper containment, storage of new fuel in the upper containment, the continued testing and maintenance of the IFTS during power operation, as well as the following:

- The effects of the weight of the new fuel bundles on the drywell and primary containment structure, fuel racks and other components in combination with LOCA generated hydrodynamic loads;
- The effect of the new fuel bundles on hydrogen generation during a LOCA;
- Consideration of containment isolation and integrity during fuel movement between the fuel building and containment building should a LOCA occur;
- The effect on the probability and consequences of fuel handling accidents;
- The effect on miscellaneous activities performed in the vicinity of the fuel storage racks and transfer equipment such as movement and storage of equipment; and
- Consideration of the current license conditions regarding storage of new fuel.

Based on the evaluation documented in Reference (4) as described above, the removal of the IFTS blind flange in Modes 1, 2, or 3 for testing, maintenance and moving new fuel for up to 40 days during an operating cycle, does not adversely affect the ability to provide effective containment isolation when required.

G. IMPACT ON PREVIOUS SUBMITTALS

We have reviewed the proposed changes regarding impact on any previous submittals, and have determined that there is no impact on any outstanding license amendment requests.

H. SCHEDULE REQUIREMENTS

We request approval of these proposed changes prior to December 31, 2001, to support preparation for the next refueling outage.

I. REFERENCES

(1) Letter from D. Pickett (U.S. NRC) to R. Phares (Illinois Power), "Issuance of Amendment No. 107 to Facility Operating License No. NPF-62 – Clinton Power Station, Unit 1 (TAC No. M95826)," dated October 3, 1996.

(2) Letter from W. Connell (Illinois Power) to U.S. NRC, "Clinton Power Station Proposed Amendment of Facility Operating License No. NPF-62 (LS-96-006)," dated June 28, 1996.

(3) Letter from W. Connell (Illinois Power) to U.S. NRC, "Clinton Power Station Revision to Proposed Amendment of Operating License No. NPF-62 (LS-96-003) and Response to Related Request for Additional Information," dated September 17, 1996.

(4) Letter from P. Hinnenkamp to U.S. NRC, "Clinton Power Station Inclined Fuel Transfer System Blind Flange Removal and Storage of New Fuel In Upper Containment Fuel Storage Pool During Power Operations," dated October 02, 2000.

1 Winch
2 Hydraulic Power Supply
3 Fluid Stop
4 Vent Pipe
5 Winch Cable Enclosure Pipes
6 Horizontal Guide Arms
7 Upper Pool Upender
8 Hydraulic Cylinder
9 Hydraulic Cylinder
10 Upper Pool Framing
11 Flap Valve
12 Hydraulic Cylinder
13 Fill Valve (1F42-F001)
14 Sheave Box
15 Primary Containment Penetration Sleeve
16 Hydraulic Cylinder
17 Manual Gate Valve (1F42-F002)
18 Primary Containment Blind Flange
19 Containment Bellows
20 Transfer Tube
21 Hydraulic Power Supply
22 Midsupport
23 Wire Rope (Cables)
24 Carriage
24A Tilt Tube
24B Follower
25 Gate Valve (1F42-F004)
26 Bellows
27 Drain Valve (1F42-F003)
28 Horizontal Guide Arms
29 Valve Support Structure
30 Lower Pool Framing
31 Lower Pool Upender
32 Pivot Arm Framing

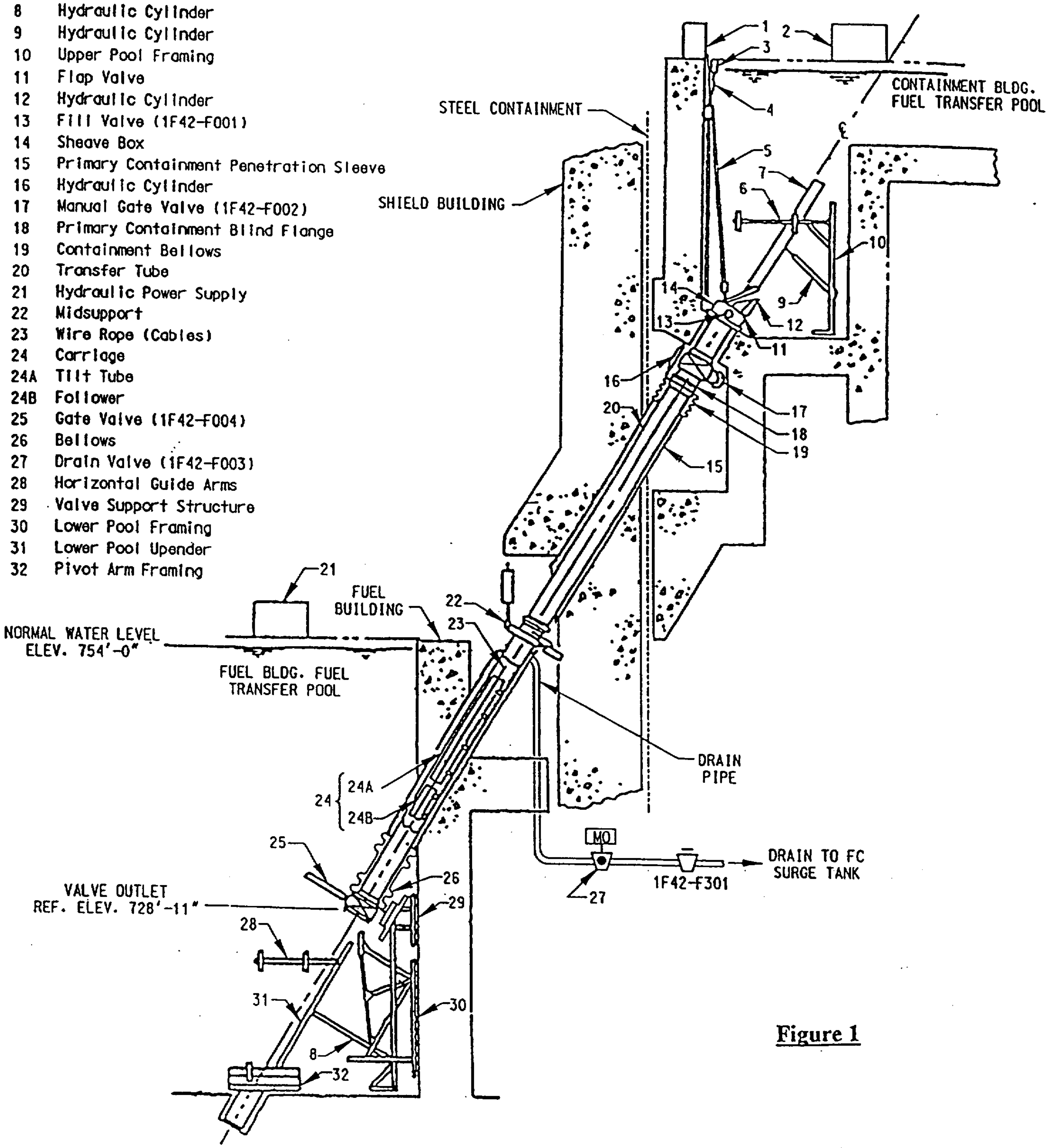

Figure 1

Attachment B
Proposed Technical Specification Changes
Clinton Power Station, Unit 1

MARKED-UP TS PAGES FOR PROPOSED CHANGES

REVISED TS PAGES

3.6-9
3.6-17

REVISED BASES PAGES
(PROVIDED FOR INFORMATION ONLY)

B 3.6-18
B 3.6-23
B 3.6-24

3.6 CONTAINMENT SYSTEMS

3.6.1.3 Primary Containment Isolation Valves (PCIVs)

LCO 3.6.1.3 Each PCIV shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3,
MODES 4 and 5 for RHR Shutdown Cooling System suction from the reactor vessel isolation valves when associated isolation instrumentation is required to be OPERABLE per LCO 3.3.6.1, "Primary Containment and Drywell Isolation Instrumentation," Function 5.c.

-----------------------NOTE-----------------------
The following Applicabilities apply only to secondary containment bypass leakage isolation valves.

During CORE ALTERATIONS,
During movement of irradiated fuel assemblies in the primary or secondary containment,
During operations with a potential for draining the reactor vessel (OPDRVs).

ACTIONS

-----------------------NOTES-----------------------
1. Penetration flow paths may be unisolated intermittently under administrative controls.

2. Separate Condition entry is allowed for each penetration flow path.

3. Enter applicable Conditions and Required Actions for systems made inoperable by PCIVs.

4. Enter applicable Conditions and Required Actions of LCO 3.6.1.1, "Primary Containment," when PCIV leakage results in exceeding overall containment leakage rate acceptance criteria in MODES 1, 2, and 3.

INSERT

(continued)

INSERT for LCO 3.6.1.3 Actions

5. Not applicable for the Inclined Fuel Transfer System (IFTS) penetration when the associated primary containment blind flange is removed, provided that the fuel building fuel transfer pool water is maintained ≥ el. 753 ft., the steam dryer pool to reactor cavity pool gate is installed with the seal inflated and a backup air supply provided, the total time the flange is open does not exceed 40 days per operating cycle, and the IFTS transfer tube drain valve(s) remain(s) closed, except that the IFTS tube drain valve(s) may be opened under administrative controls.

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.6.1.3.3	----------------NOTES---------------- 1. Valves and blind flanges in high radiation areas may be verified by use of administrative means. 2. Not required to be met for PCIVs that are open under administrative controls. ~~3. Not required to be met for the Inclined Fuel Transfer System (IFTS) penetration when the associated primary containment blind flange is removed, provided that the fuel building fuel transfer pool water level is maintained ≥ el. 753 ft. and the IFTS transfer tube drain valve(s) remain(s) closed, except that the IFTS tube drain valve(s) may be opened under administrative controls.~~ -- Verify each primary containment isolation manual valve and blind flange that is located inside primary containment, drywell, or steam tunnel and is required to be closed during accident conditions is closed.	Prior to entering MODE 2 or 3 from MODE 4, if not performed within the previous 92 days

(continued)

3.6 CONTAINMENT SYSTEMS

3.6.1.3 Primary Containment Isolation Valves (PCIVs)

LCO 3.6.1.3 Each PCIV shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3,
MODES 4 and 5 for RHR Shutdown Cooling System suction from the reactor vessel isolation valves when associated isolation instrumentation is required to be OPERABLE per LCO 3.3.6.1, "Primary Containment and Drywell Isolation Instrumentation," Function 5.c.

-----------------------NOTE------------------------------
The following Applicabilities apply only to secondary containment bypass leakage isolation valves.

During CORE ALTERATIONS,
During movement of irradiated fuel assemblies in the primary or secondary containment,
During operations with a potential for draining the reactor vessel (OPDRVs).

ACTIONS

------------------------------------NOTES------------------------------------

1. Penetration flow paths may be unisolated intermittently under administrative controls.
2. Separate Condition entry is allowed for each penetration flow path.
3. Enter applicable Conditions and Required Actions for systems made inoperable by PCIVs.
4. Enter applicable Conditions and Required Actions of LCO 3.6.1.1, "Primary Containment," when PCIV leakage results in exceeding overall containment leakage rate acceptance criteria in MODES 1, 2, and 3.
5. Not applicable for the Inclined Fuel Transfer System (IFTS) penetration when the associated primary containment blind flange is removed, provided that the fuel building fuel transfer pool water is maintained $\geq$ el. 753 ft., the steam dryer pool to reactor cavity pool gate is installed with the seal inflated and a backup air supply provided, the total time the flange is open does not exceed 40 days per operating cycle, and the IFTS transfer tube drain valve(s) remain(s) closed, except that the IFTS tube drain valve(s) may be opened under administrative controls.

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.6.1.3.3	------------------NOTES------------------ 1. Valves and blind flanges in high radiation areas may be verified by use of administrative means. 2. Not required to be met for PCIVs that are open under administrative controls. -- Verify each primary containment isolation manual valve and blind flange that is located inside primary containment, drywell, or steam tunnel and is required to be closed during accident conditions is closed.	Prior to entering MODE 2 or 3 from MODE 4, if not performed within the previous 92 days

(continued)

BASES

ACTIONS (continued)

The ACTIONS are modified by Notes 3 and 4. These Notes ensure appropriate remedial actions are taken, if necessary, if the affected system(s) are rendered inoperable by an inoperable PCIV (e.g., an Emergency Core Cooling System subsystem is inoperable due to a failed open test return valve, or when the primary containment leakage limits are exceeded). Pursuant to LCO 3.0.6, these ACTIONS are not required even when the associated LCO is not met. Therefore, Notes 3 and 4 are added to require the proper actions to be taken.

INSERT

A.1 and A.2

With one or more penetration flow paths with one PCIV inoperable except for inoperability due to leakage not within a limit specified in an SR to this LCO, the affected penetration flow path must be isolated. The method of isolation must include the use of at least one isolation barrier that cannot be adversely affected by a single active failure. Isolation barriers that meet this criterion are a closed and de-activated automatic valve, a closed manual valve, a blind flange, and a check valve with flow through the valve secured. For penetrations isolated in accordance with Required Action A.1, the device used to isolate the penetration should be the closest one available to the primary containment. The Required Action must be completed within the 4 hour Completion Time (8 hours for main steam lines and 12 hours for instrument line excess flow check valves (EFCVs)). The specified time period of 4 hours is reasonable considering the time required to isolate the penetration and the relative importance of supporting primary containment OPERABILITY during MODES 1, 2, and 3. For main steam lines, an 8 hour Completion Time is allowed. The Completion Time of 8 hours for the main steam lines allows a period of time to restore the MSIVs to OPERABLE status given the fact that MSIV closure will result in isolation of the main steam line(s) and a potential for plant shutdown. For EFCVs, a 12 hour Completion Time is allowed. The Completion Time of 12 hours for EFCVs allows a period of time to restore the EFCVs to OPERABLE status given the fact that these valves are associated with instrument lines which are of small diameter and thus represent less significant leakage paths.

(continued)

INSERT for B 3.6.1.3 (ACTIONS)

A fifth note has been added to allow removal of the Inclined Fuel Transfer System (IFTS) blind flange when primary containment operability is required. This provides the option of operating the IFTS for testing, maintenance, or movement of new (non-irradiated) fuel to the upper containment pool when primary containment operability is required. Requiring the fuel building fuel transfer pool water level to be ≥ el. 753 ft. ensures a sufficient depth of water over the highest point on the transfer tube outlet valve in the fuel building fuel transfer pool to prevent direct communication between the containment building atmosphere and the fuel building atmosphere via the inclined fuel transfer tube. Because excessive leakage of water from the upper containment pool through the open IFTS penetration would result in the inability to provide the required volume of water to the suppression pool in an upper pool dump, an administrative control was required to ensure the upper pool volume meets the design requirements. In addition to the dedicated individual stationed at the IFTS controls, the required administrative controls involve the installation of the Steam Dryer Pool to Reactor Cavity Pool gate with the seal inflated and a backup air supply provided. Since the IFTS transfer tube drain line does not have the same water level as the transfer tube, and the motor-operated drain valve remains open when the carriage is in the lower pool, administrative controls are required to ensure the drain line flow path is quickly isolable in the event of a LOCA. In this instance, administrative control of the IFTS transfer tube drain line isolation valve(s) include stationing a dedicated individual, who is in continuous communication with the control room, at the IFTS control panel in the fuel building. This individual will initiate closure of the IFTS transfer tube drain line motor-operated isolation valve (1F42-F003) and the IFTS transfer tube drain line manual isolation valve (1F42-F301) if a need for primary containment isolation is indicated. The pressure integrity of the IFTS transfer tube, the seal created by water depth of the fuel building fuel transfer pool, and the administrative control of the drain line flow path create an acceptable barrier to prevent the post-accident containment building atmosphere from leaking into the fuel building.

The total time per operating cycle that the blind flange may be open in Modes 1, 2, and 3 without affecting plant risk levels is 40 days.

SURVEILLANCE REQUIREMENTS

SR 3.6.1.3.2 (continued)

these devices, once they have been verified to be in the proper position, is low. A second Note is included to clarify that PCIVs open under administrative controls are not required to meet the SR during the time the PCIVs are open.

SR 3.6.1.3.3

This SR verifies that each primary containment manual isolation valve and blind flange located inside primary containment, drywell, or steam tunnel, and required to be closed during accident conditions, is closed. The SR helps to ensure that post accident leakage of radioactive fluids or gases outside the primary containment boundary is within design limits. For devices inside primary containment, drywell, and steam tunnel, the Frequency of "prior to entering MODE 2 or 3 from MODE 4, if not performed within the previous 92 days", is appropriate since these devices are operated under administrative controls and the probability of their misalignment is low.

~~Three~~ Two Notes are added to this SR. The first Note allows ~~valves~~ and blind flanges located in high radiation areas to be verified by use of administrative controls. Allowing verification by administrative controls is considered acceptable since access to these areas is typically restricted during MODES 1, 2, and 3. Therefore, the probability of misalignment of these devices, once they have been verified to be in their proper position, is low. A second Note is included to clarify that PCIVs that are open under administrative controls are not required to meet the SR during the time that the PCIVs are open.

~~A third note is added to allow removal of the Inclined Fuel Transfer System (IFTS) blind flange when primary containment operability is required. This provides the option of operating the IFTS system for testing and maintenance when primary containment operability is required. Requiring the fuel building fuel transfer pool water level to be ≥ el. 753 ft. ensures a sufficient depth of water over the highest point on the transfer tube outlet valve in the fuel building fuel transfer pool to prevent direct communication between the containment building atmosphere and the fuel building~~

(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.6.1.3.3 (continued)

~~atmosphere via the inclined fuel transfer tube. Since the IFTS transfer tube drain line does not have the same water seal as the transfer tube, and the motor-operated drain valve remains open when the carriage is in the lower pool, administrative controls are required to ensure the drain line flow path is quickly isolable in the event of a LOCA. In this instance, administrative control of the IFTS transfer tube drain line isolation valve(s) include stationing a dedicated individual, who is in continuous communication with the control room, at the IFTS control panel in the fuel building. This individual will initiate closure of the IFTS transfer tube drain line motor-operated isolation valve (1F42-F003) and the IFTS transfer tube drain line manual isolation valve (1F42-F301) if a need for primary containment isolation is indicated. The pressure integrity of the IFTS transfer tube, the seal created by water depth of the fuel building fuel transfer pool, and the administrative control of the drain line flow path create an acceptable barrier to prevent the post-accident containment building atmosphere from leaking into the fuel building.~~

~~The total time per operating cycle that the blind flange may be open in Modes 1, 2, and 3 without affecting plant risk levels is 40 days.~~

SR 3.6.1.3.4

Verifying the isolation time of each power operated and each automatic PCIV is within limits is required to demonstrate OPERABILITY. MSIVs may be excluded from this SR since MSIV full closure isolation time is demonstrated by SR 3.6.1.3.6. The isolation time test ensures that the valve will isolate

(continued)

INFORMATION SUPPORTING A FINDING OF NO SIGNIFICANT HAZARDSCONSIDERATION

According to 10 CFR 50.92, "Issuance of Amendment," paragraph (c) a proposed amendment to an operating license 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 of occurrence or consequences of an accident previously evaluated; or,

(2) Create the possibility of a new or different kind of accident from any previously analyzed; or,

(3) Involve a significant reduction in a margin of safety.

AmerGen Energy Company, LLC (i.e., AmerGen), proposes changes to Appendix A, Technical Specifications (TS), of Facility Operating License No. NPF-62. Specifically, we propose to add a conditional Note to the Actions associated with TS Section 3.6.1.3, "Primary Containment Isolation Valves (PCIVs)," which will provide the required conditions to be met when removing the Inclined Fuel Transfer System (IFTS) blind flange during Modes 1, "Power Operation," 2, "Startup," or 3, "Hot Shutdown." Additionally, the proposed changes delete conditional Note 3 to TS Section 3.6.1.3 Surveillance Requirement (SR) 3.6.1.3.3 added in Amendment 107.

Information supporting the determination that the criteria set forth in 10 CFR 50.92 are met for this amendment request is indicated below.

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

The proposed changes allow operation of the IFTS while primary containment operability is required. The proposed changes result in a change to the primary containment boundary. A loss of primary containment integrity is not an accident initiator. The proposed changes do not involve any modifications to plant systems or design parameters or conditions that contribute to the initiation of any accidents previously evaluated. Therefore, the proposed changes do not increase the probability of any accident previously evaluated.

The proposed changes potentially affect the allowable leakage of the containment structure which is designed to mitigate the consequences of a loss-of-coolant accident (LOCA). The function of the primary containment is to maintain functional integrity during and following the peak transient pressures and temperatures that result from any LOCA. The primary containment is designed to limit fission product leakage following the design basis LOCA. Because the proposed changes do not alter the plant design, only the extent of the boundaries that provide primary containment isolation for the IFTS penetration, the proposed changes do not result in an increase in primary containment leakage. Once the blind flange is removed the IFTS transfer tube

and its appurtenances become part of the primary containment boundary. As part of the primary containment boundary these subject components would be exposed to LOCA pressures. While these components have not been fabricated or installed to meet the acceptance criteria for a containment penetration, they have been built to withstand the rigors of a commercial nuclear application. This includes, but is not limited to, consideration of adequate seismic support, inertial forces imparted to the fuel, appropriate cooling and shielding for the spent nuclear fuel, integrity of the fluid system pressure boundary, and a safety analysis, including a failure modes and effects evaluation which assumes that credible events and credible combinations of events have been considered and mitigated against by either a fail safe design or redundancy. They are judged to be an acceptable barrier to prevent the uncontrolled release of post-accident fission products for the purposes of this amendment request.

Further, it has been shown that the largest potential leakage pathway, the IFTS transfer tube itself, would remain sealed by the depth of water required by the proposed TS change to be maintained in the fuel building fuel transfer pool. The transfer tube drain line constitutes the other possible leakage pathway, and will be required to be capable of being isolated via administrative control of the manual isolation valve in the drain line. Additionally, due to the physical relationships of the buildings and components involved, any leakage from either of these pathways is fully contained within the boundaries of the secondary containment and would be filtered by the Standby Gas Treatment System prior to release to the environment.

Leakage from the containment upper pool through the open IFTS transfer tube could potentially result in the excessive loss of water from the volume intended to provide post-LOCA makeup water to the suppression pool. The upper pool dump volume is maintained by requiring the installation of the steam dryer pool to reactor cavity pool gate with the seal inflated and a backup air supply provided. Maintaining the upper pool dump volume ensures proper suppression pool level can be achieved following a LOCA which provides for long-term steam condensation.

Based on the above, the proposed changes do not increase the consequences of an accident previously evaluated.

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

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

The proposed changes do not involve a change to the plant design or operation except for when IFTS is operated. As a result, the proposed changes do not affect any of the parameters or conditions that could contribute to the initiation of any accidents. No new accident modes or equipment failure modes are created by these changes. Extending the primary containment boundary to include portions of the IFTS has no influence on, nor does it contribute to the possibility

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

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

The proposed changes only affect the extent of a portion of the primary containment boundary. The time the IFTS blind flange will be removed will be limited to 40 days per operating cycle. Having IFTS in operation does not affect the reliability of equipment used for core cooling. In addition, precautions will be taken to administratively control the IFTS transfer tube drain path so that the proposed change will not increase the probability that an increase in leakage from the primary containment to the secondary containment could occur. Precautions will also be taken to ensure that the steam dryer pool to reactor cavity pool gate is installed prior to removing the IFTS flange when primary containment is required to be operable. Installation of this gate will ensure that an adequate containment upper pool dump volume is maintained to support post-LOCA suppression pool makeup water volume requirements.

The margin of safety that has the potential of being impacted by the proposed changes involve the offsite dose consequences of postulated accidents which are directly related to containment leakage rate. The containment isolation system is designed to limit leakage to L_a which is defined by the CPS TS to be 0.65% of primary containment air weight per day at the design basis LOCA maximum peak containment pressure (i.e., P_a). The limitation on containment leakage rate is designed to ensure that total leakage volume will not exceed the volume assumed in the accident analyses at P_a. The margin of safety for the offsite dose consequences of postulated accidents directly related to the containment leakage rate is maintained by meeting the L_a acceptance criteria during operation. The L_a value is not being modified by this proposed TS change. The IFTS will continue to provide an acceptable barrier to prevent unacceptable containment leakage during a LOCA, and therefore these changes will not create a situation causing the containment leakage rate acceptance criteria to be violated.

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

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

INFORMATION SUPPORTING AN ENVIRONMENTAL ASSESSMENT

AmerGen Energy Company, LLC (i.e., AmerGen) has evaluated this proposed change against the criteria for identification of licensing and regulatory actions requiring environmental assessment in accordance with 10 CFR 51.21, "Criteria for and identification of licensing and regulatory actions requiring environmental assessments." AmerGen has determined that this proposed change meets the criteria for a categorical exclusion set forth in 10 CFR 51.22, "Criterion for categorical exclusion; identification of licensing and regulatory actions eligible for categorical exclusion or otherwise not requiring environmental review," paragraph (c)(9), and as such, has determined that no irreversible consequences exist in accordance with 10 CFR 50.92, "Issuance of amendment," paragraph (b). This determination is based on the fact that this change is being proposed as an amendment to a license issued pursuant to 10 CFR 50, "Domestic Licensing of Production and Utilization Facilities," which changes a requirement with respect to installation or use of a facility component located within the restricted area, as defined in 10 CFR 20, "Standards for Protection Against Radiation," or that changes an inspection or surveillance requirement, and the amendment meets the following specific criteria.

(i) The proposed changes involve no significant hazards consideration.

As demonstrated in Attachment C, this proposed amendment does not involve any significant hazards consideration.

(ii) There is no significant change in the types or significant increase in the amounts of any effluent that may be released offsite.

The proposed changes, which allow the removal of the Inclined Fuel Transfer System (IFTS) blind flange when primary containment integrity is required to be operable, are consistent with the design basis of the plant. As documented in Attachment A, there will be no significant increase in the amounts of any effluents released offsite. These changes do not result in an increase in power level, do not increase the production, nor alter the flow path or method of disposal of radioactive waste or byproducts. Therefore, the proposed changes will not affect the types or increase the amounts of any effluents released offsite.

(iii) There is no significant increase in individual or cumulative occupational radiation exposure.

The proposed changes will not result in changes in the configuration of the facility. The proposed changes only affect operation of the plant in that they provide for the removal of the IFTS blind flange when primary containment integrity is required to be operable. There will be no change in the level of controls or methodology used for processing of radioactive effluents or handling of solid radioactive waste, nor will the proposal result in any change in the normal radiation levels in the plant. Therefore, there will be no increase in individual or cumulative occupational radiation exposure resulting from these changes.