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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: Response to Request for Additional Information Regarding Risk Aspects of Inclined Fuel Transfer System License Amendment Request for Clinton Power Station

Reference: Letter from J. M. Heffley (AmerGen Energy Company, LLC) to U.S. NRC, "Request for Amendment to Technical Specifications to Permit Inclined Fuel Transfer System Blind Flange Removal During Power Operations," dated April 2, 2001

In the referenced letter, AmerGen Energy Company (AmerGen), LLC submitted a request for changes to Appendix A, Technical Specifications (TS), of Facility Operating License No. NPF-62 for the Clinton Power Station (CPS). Specifically, AmerGen requested the addition of a conditional note before the Actions for TS Section 3.6.1.3, "Primary Containment Isolation Valves (PCIVs)," which will identify the controls required for allowing the Inclined Fuel Transfer System blind flange to be removed during Modes 1, 2, or 3. The NRC, in a conference call, requested additional information regarding the proposed changes in the referenced letter. The attachment to this letter provides the NRC requested information.

A001

Should you have any questions related to this information, please contact Mr. Timothy A. Byam at (630) 657-2804.

Respectfully,

for J. W. Simpkin
K. R. Jury
Director – Licensing
Mid-West Regional Operating Group

Attachments:

Affidavit
Attachment: Response to Request for Additional Information Regarding Risk Aspects of Inclined Fuel Transfer System License Amendment Request for Clinton Power Station

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 DUPAGE	)	
IN THE MATTER OF	)	
AMERGEN ENERGY COMPANY, LLC	)	**Docket Number**
CLINTON POWER STATION, UNIT 1	)	**50-461**

SUBJECT: **Response to Request for Additional Information Regarding Risk Aspects of Inclined Fuel Transfer System License Amendment Request for Clinton Power Station**

AFFIDAVIT

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

T. W. Simpkin

T. W. Simpkin
Manager – Licensing

Subscribed and sworn to before me, a Notary Public in and for the State above named, this 15th day of January, 2002.

Timothy Byam

Notary Public

"OFFICIAL SEAL"
TIMOTHY A. BYAM
COMMISSION EXPIRES 12/04/05
NOTARY PUBLIC STATE OF ILLINOIS

Question 1:
Please provide an assessment of the impact of the proposed license amendment (i.e., full operation of the Inclined Fuel Transfer System (IFTS) while in Modes 1,2, or 3) on the core damage frequency and large early release frequency for Clinton Power Station.

Response 1:
There is no impact on the CPS core damage frequency (CDF) as a result of having the IFTS flange in its open position because there is no adverse impact to systems that prevent core damaging accidents or on initiating events leading to core damage. The upper containment pool is available for makeup to the suppression pool if the need should arise. However, even if the portion of the pool that communicates with the IFTS tube should inadvertently drain to the spent fuel pool there remains sufficient inventory in the upper pools to satisfy the suppression pool makeup function.

Impact on containment release frequency can be estimated for two potential containment leakage paths. One potential release path is through the IFTS drain line and the IFTS drain valves during the period of time that they are open. The other potential path is through the IFTS transfer tube during the period of time the bottom gate valve on the IFTS tube is open.

The estimated containment release frequency through the open IFTS drain valves is less than 1 E-7 /yr. However, for the majority of containment releases through this path the LERF contribution would be much less than this because of the scrubbing action of the suppression pool.

The release path from the IFTS transfer tube through the spent fuel pool would only be applicable during events such as a small break loss of coolant accident (SBLOCA) in which the water seal formed by the spent fuel storage pool may be expelled from the IFTS tube if the bottom gate valve is opened. The containment design pressure is 15 psig, which is capable of handling the SBLOCA. Releases through this path would be scrubbed by at least one water pool before entering the environment. As noted above, scrubbing would first occur within the suppression pool inside containment prior to the fission products reaching the upper containment where it would then enter the IFTS tube. Any drywell bypass leakage however, would bypass the suppression pool prior to reaching the upper containment. Any release through the IFTS tube regardless of whether it was scrubbed by the suppression pool or not would then pass through the spent fuel pool, which would provide additional scrubbing of the release. As a result of the scrubbing action of the spent fuel pool, and the suppression pool in some cases, none of the releases through this path would be regarded as a "large" release. Therefore, there is no LERF contribution through this release path.

The total LERF contribution from the two paths is then estimated to be much less than 1 E-7/yr.

Question 2:
In order to assess the structural capability of the IFTS in beyond-design-basis events, please provide the following information:

a. *the safety class, design pressure, and estimated ultimate pressure capacity of the structures and components comprising the IFTS pressure boundary, specifically, the transfer tube, bellows, upper and bottom gate valves (1F42-F002 and 1F42-F004), drain line, and drain line isolation valves (1F42-F003 and 1F42-F301),*

b. *the fragility curves (probability of failure as a function of containment pressure) for the major containment structures and penetrations (including the drywell, containment cylinder and dome, personnel airlocks, equipment hatches, and IFTS),*

c. *the composite fragility curve for the containment for the cases with the blind flange installed and the blind flange removed, and*

d. *the seismic fragilities (e.g., the HCLPF values) of the IFTS-related structures (transfer tube, bellows, drain line, and connected valves) and a comparison to the fragilities of the containment structure and penetrations.*

Response 2:

a. The following table provides design pressure ratings for the requested equipment and components.

Component	Safety Class	Design Pressure Rating
Transfer Tube		
1F41D001	Safety related	40 psig
Bellows		
1F42G001	Safety related	20 psig
1F42G002	Non-safety related	27' H_2O
Expansion Joints		
1F42D300	Non-safety related	50 psig
1F42D301	Non-safety related	15 psig
Gate Valves		
1F42F002	Non-safety related	50 psig
1F42F004	Non-safety related	50 psig

Drain Line 1FH07A	Non-safety related	100 psig
Drain Line Isolation Valves		
1F42F003	Non-safety related	50 psig
1F42F301	Non-safety related	285 psig

b. Containment fragility curves were developed to estimate the containment failure probability as a function of containment pressure due to a number of potential containment failure mechanisms. These fragility curves are shown in Figure 1. The fragility curves do not include a failure mechanism for the drywell because the drywell is enclosed by the containment and because the drywell vent arrangement will limit the differential pressure across the drywell below pressures at which it would fail. The fragility curves do not include a failure estimate for the IFTS system either because, with the IFTS piping and IFTS flange rotated to the closed position, the pressure retaining capacity remains well within the capability of the other containment structures.

c. The containment fragility curve with the IFTS flange in the closed position is addressed in the response to part b above. The containment fragility curve with the IFTS flange open but with the drain valve and bottom gate valve closed would also be the same as addressed in part b because the pressure rating of the IFTS tube and the valves is high enough that these elements would not be controlling. If the IFTS tube flange is open and the bottom gate valve is open the pressure retaining capability of the IFTS tube would be limited by the water head at the bottom of the IFTS tube provided by the spent fuel pool.

d. The components that form a part of the containment boundary (i.e., bellows, 1F42G001, spool pieces, fuel transfer tube, and the containment penetration sleeve) are classified as seismically-qualified components. The drain piping and drain valves, although not seismically-qualified, are rigid structures that have design ratings, ranging from 50 psig to 285 psig, that would be expected to remain intact following a seismic event.

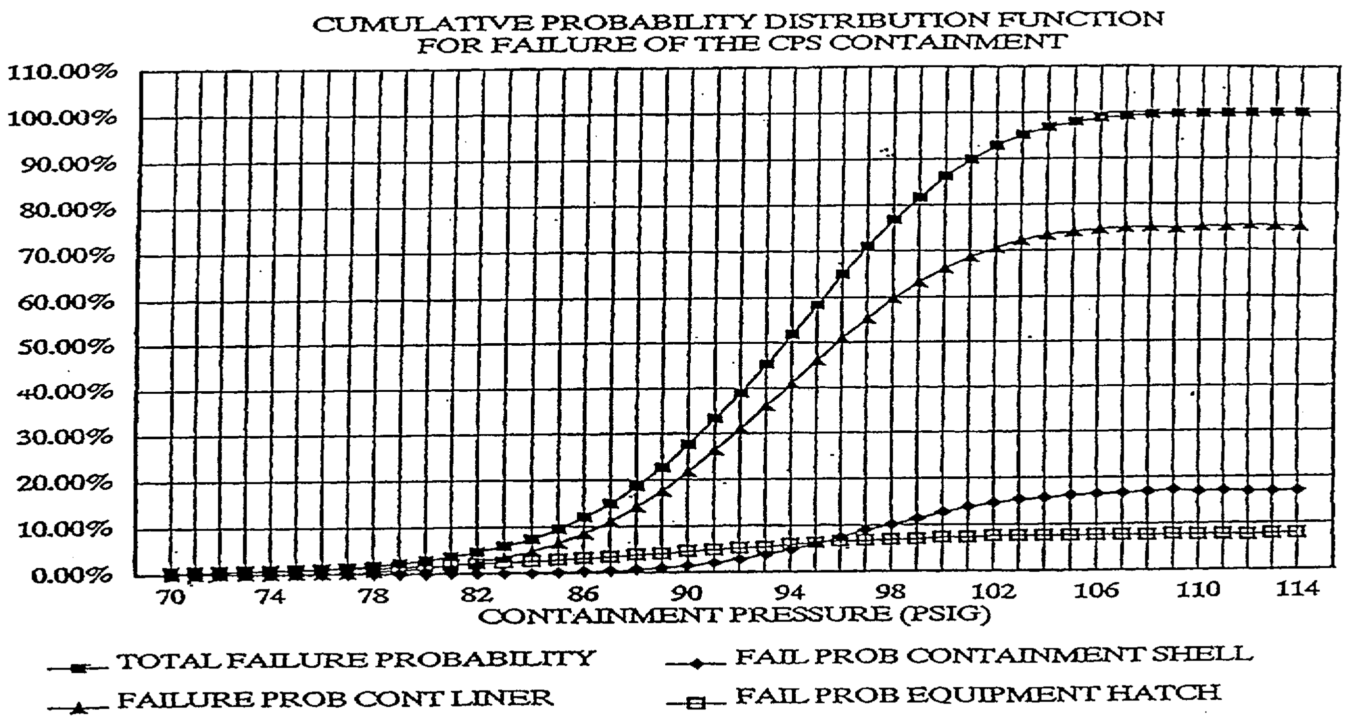
CUMULATIVE PROBABILITY DISTRIBUTION FUNCTION
FOR FAILURE OF THE CPS CONTAINMENT
110.00%
100.00%
90.00%
80.00%
70.00%
60.00%
50.00%
40.00%
30.00%
20.00%
10.00%
0.00%
70
74
78
82
86
90
94
98
102
106
110
114
CONTAINMENT PRESSURE (PSIG)
TOTAL FAILURE PROBABILITY
FAIL PROB CONTAINMENT SHELL
FAILURE PROB CONT LINER
FAIL PROB EQUIPMENT HATCH

FIGURE 1

Question 3:
Please describe the leak testing currently performed for the IFTS pressure boundary, and any planned changes to the leak testing program as a result of this license amendment request. Clarify whether the first and second (downstream) drain line isolation valves are included in the containment leakage rate testing program.

Response 3:
The current Primary Containment Leakage Rate Testing Program includes the IFTS penetration (i.e., 1MC-004). The cover cylinder and upper bellows (i.e. the volume encasing the Inclined Fuel Transfer Tube between the lower bellows (1F42-D301) and the blind flange) is pressurized to greater than the design basis LOCA maximum peak containment pressure (i.e., P_a) and tested. Both test connection valves, 1F42-F304A & B, are seat leakage tested individually. In addition, the O-ring seal at the blind flange is tested.

The drain line isolation valves (1F42-F003, 1F42-F301) are neither individually leak rate tested nor included in the Primary Containment Leakage Rate Testing Program. The drain line is not configured to be tested in the same manner as other penetrations in the Primary Containment Leakage Rate Testing Program. Therefore, CPS does not intend to change the Primary Containment Leakage Rate Testing Program methodology for this penetration as a result of this license amendment request.

Question 4:
Provide separately for the IFTS bottom gate valve, the IFTS drain valves, and the flap valve, an estimate of the number of hours that each valve is expected to be open during the period while the blind flange is removed. Indicate how this time is apportioned: (a) among the major IFTS operations (e.g., system testing and maintenance, training of operating crews, and transferring new fuel into the containment storage pool prior to start of refueling outages, if applicable), and (b) over the proposed 40-day period when the blind flange is removed.

Response 4:
Prior to the last refueling outage (i.e., C1R07), the IFTS blind flange was open for 16 days, 1 hour, and 5 minutes. This time duration is representative for future outages, however other situations may require more or less open time. During the time the blind flange is open, the flap valve is almost always open because the carriage is always stored inside the Containment when the IFTS is not in use. The time the flap valve is open is not relevant because the IFTS cable tubes and the vent tube are always open. As a result, the Containment atmosphere is always connected to the inside of the IFTS tube, below the flap valve. Once the carriage has been lowered to just above the bottom gate valve, the flap and fill valves are closed in preparation for draining the IFTS tube. The drain valve is opened to drain the IFTS tube prior to opening the bottom gate valve. Draining the IFTS tube takes approximately 2 minutes and once the bottom gate valve is open, the drain valve could be manually closed. In the automatic mode of operation, the

drain valve would stay open until the bottom gate valve closed as the carriage is raised. CPS is replacing the current IFTS control system with a new system. This new control system is being installed at this time and scheduled to be completed prior to the Spring 2002 outage (i.e., C1R08). With the new IFTS control system, the drain valve will automatically close once the bottom gate valve opens during an automatic cycle. The bottom valve opens once the IFTS tube is drained to allow the carriage to be lowered into the spent fuel pool. As soon as the IFTS carriage is raised back to the fill/drain position, the bottom gate valve closes and, with the current system logic, the drain valve would close. The bottom valve would typically be open only about 15 minutes per hour during fuel transfer and about 5 minutes per hour during testing. It is estimated that the bottom valve would be open for approximately 40 hours during an operating cycle. As stated previously, during times when the system is not in operation, the carriage is stored in the Containment and the bottom gate valve is closed.

Question 5:
Other than committing to station an operator near the drain valve during IFTS operation while at power, the April 2, 2001 submittal does not indicate any administrative controls on opening the drain valve, or provisions to assure the valve would remain closed at other times while the blind flange is removed. Confirm whether the following provisions would be in place for the first and second drain line valves: (1) administrative controls to assure that the valve is normally closed (e.g., locked closed, power removed), (2) position indication or drain tank level alarm in the control room, (3) ability to close the valve from the control room.

Response 5:
CPS procedure 3702.01, "Inclined Fuel Transfer System (IFTS)," describes the operation of the IFTS in the manual and automatic modes. This procedure provides the guidance, prerequisites and limitations on the controls for opening the IFTS drain valves. These requirements include the following.

(1) Both of the drain valves (i.e., motor-operated and manual) must be closed or under administrative control if opened in Modes 1, 2, or 3 with the blind flange removed. Therefore, to exit the administrative controls with the blind flange open, the drain valves must be closed. The IFTS would be shut down with the drain valves closed prior to the end of a day's activity. The dedicated operator, in constant communication with the control room, is stationed at the controls for the motor-operated drain valve. This operator is responsible for closing the motor-operated valve and then manually shutting the other drain valve during accident conditions as directed by the control room. The procedure clearly states when the drain valves are required to be closed. Therefore, there are no additional administrative controls required to assure that the valves are closed when the blind flange is removed.

(2) There is no position indication for the IFTS drain valve in the Main Control Room. As stated in Reference 1, water is drained from the IFTS tube through

the drain lines to one of the Fuel Pool Cooling and Cleanup (FC) system surge tanks. The Main Control Room has tank level indication and high and low level alarms associated with the FC surge tank.

(3) The IFTS drain valve can only be closed locally and cannot be closed from the Main Control Room.

Question 6:
Justify why the maximum drywell bypass leakage allowed by Technical Specification 3.6.5.1.3 (1.0 foot^2) should not be reduced to a value necessary to preserve the IFTS water seal in a design basis small break LOCA (that occurs while the bottom gate valve is open). The reduced technical specification value would not appear to introduce any operational constraints if the drywell leakage value is typically well below 0.1 foot^2. The reduced bypass value would also provide added assurance that the fission products released during the later stages of a severe accident (following the initial blowdown in a LOCA, and following reactor vessel breach in a transient) pass through rather than bypass the suppression pool.

Response 6:
CPS Technical Specification (TS) 3.6.5.1, "Drywell," Surveillance Requirement (SR) 3.6.5.1.3 requires verification that the drywell bypass leakage is less than or equal to the bypass leakage limit. As stated in the Bases for SR 3.6.5.1.3, this surveillance ensures that the actual drywell bypass leakage is less than the maximum drywell leakage assumed in the safety analysis. As further stated, a more conservative drywell bypass leakage limit based on a design limit of 1.0 ft^2 is being administratively applied to this surveillance. The SR further requires that during the first startup following bypass leakage testing, the acceptance criteria is ≤ 10% of the drywell bypass leakage limit. Past performance of this surveillance has shown that the drywell bypass leakage is well below the required limit and is in fact well below the administrative limit imposed. As required by the SR the as-left bypass leakage prior to startup following performance of this surveillance has been demonstrated to be ≤ 10% of the required limit.

CPS typically has low drywell bypass leakage. In 1993, the drywell bypass leakage test was performed with a measured (corrected) leakage value of 30.23 scfm (Reference 4). This compares to 21.86 scfm measured in 1991 (Reference 5). The allowable drywell bypass leakage is 4312 scfm to assure that the containment design pressure will not be exceeded following a SBLOCA. These leakage results are about 0.005 and 0.007 of the allowable leakage. Based on these results it has been demonstrated that substantial suppression pool bypass leakage will not occur and that the current calculated containment design pressure limit of 9 psig is adequate. Therefore, AmerGen does not intend to revise the bypass leakage limit associated with SR 3.6.5.1.3.

Question 7:
It is possible that the IFTS bottom gate valve would be open at the onset of a severe accident, with the fuel transfer carriage or cables part way through the open valve. Justify that an open bottom gate valve would be promptly closed in risk-significant events, thereby restoring containment leak-tight integrity. In this regard, please provide the following:

a. *identify systems required to move the fuel transfer carriage and close the IFTS bottom gate valve, and discuss the availability of these systems (or manual back-up systems) in frequency-dominant sequences.*

b. *provide an estimate of the core damage frequency for those events that involve loss of systems needed to operate the carriage or close the valve, based on the latest PSA.*

c. *confirm whether and how the carriage can be moved and the open valve can be closed in the frequency-dominant core damage events at Clinton Power Station, including events that involve loss of power to the carriage or valve and loss of lighting, and*

d. *Identify any plant procedures that would govern such actions.*

Response 7:

a. In order to move the fuel transfer carriage and close the IFTS bottom gate valve, several of IFTS components must be functional. These include the carriage winch, motor and power supply, as well as the hydraulic actuator and hydraulic actuator power supply for the bottom gate valve. The winch required to move the carriage is powered from a 480 VAC motor. Failure of the motor, winch, or motor power supply would require that the carriage be moved out of the way of the bottom gate valve. A hydraulic power unit is provided in both the Fuel Building and the Containment to actuate the cylinders attached to the upender, the fill valve, the flap valve, and the bottom gate valve. Failure of the carriage winch while the carriage is in the lower position will prevent the ability to close the bottom gate valve.

IFTS control panels are provided in close proximity to each transfer pool area in the Containment and Fuel Building. These panels have pushbuttons for actuating their respective upender, another pushbutton for initiating the transfer sequence to the other building and a stop button. The transfer operation functions on an automatic basis with provision made for manual override. Failure of the two control panels would cause the failure of the winch and the bottom valve. Aside from the failure of the individual panel components, loss of electrical power would cause the failure of these panels and therefore the failure of the winch and bottom gate valve.

The IFTS components are powered from non-safety related power supplies. A loss of offsite power (LOOP) will result in the loss of power to control panels, hydraulic actuators, and carriage winch. As a result, the IFTS will fail as-is since a LOOP will result in the inability to move the IFTS carriage and close the bottom gate valve in the normal method.

b. In a partial or full LOOP event, the IFTS system is designed to fail as-is. It is estimated that the frequency of core damage events involving partial or full LOOP to be about 7E-6 per year, or about one-half of the total core damage frequency (CDF) for CPS. Because of the dependence of both the fuel transfer carriage and the IFTS bottom valve on non-safety-related ac power and the relatively high contribution to CDF from LOOP events at CPS, the dominant failure mode (given core damage) is expected to be failure to close due to LOOP. In the event the bottom valve cannot be closed, the water seal will continue to maintain a leak-tight barrier to the release of fission products up to a containment pressure of about 9 psig. At containment pressures greater than 9 psig, which could develop in beyond-DBA events, the pressure inside the IFTS tube will exceed the hydrostatic pressure at the bottom valve outlet, and releases into the spent fuel storage pool will occur. If releases through the bottom valve in these sequences are conservatively assumed to constitute a large release, the incremental conditional large early release probability (ICLERP) can be estimated by assuming that the bottom valve fails to isolate in all loss of offsite power events. Under these assumptions, the ICLERP, for an exposure of 40 hours (the nominal time the bottom valve would be open per fuel cycle) would be:

ICLERP = 7E-6 per year x 40 hours /24 hours per day /365 days per year
= 3E-8

This is below the ICLERP guideline value of 5E-8 provided in Regulatory Guide 1.177 for confirming that a proposed permanent TS change has only a small quantitative impact on plant risk.

c. In the event that a LOOP were to occur, depending on the position of the carriage, it may be necessary to manually raise the carriage and then to manually close the bottom valve. CPS procedure 3702.01 provides specific guidance on the operation of the IFTS in the event of a loss of power. If a loss of power were to occur, it is expected that the operator would take prompt action to move the carriage and close the bottom valve. It is estimated that under worst case conditions that the bottom valve could be closed in 1 to 1 1/2 hours.

d. CPS procedure 3702.01 governs actions associated with IFTS operations.

Question 8:
With the blind flange removed there is typically only a single barrier to fission product release, and the plant is more susceptible to upper pool drain down and uncontrolled releases. A commitment to maintain the IFTS upper gate valve and both IFTS drain line valves closed during periods when the IFTS is not operating (such as nights and weekends) would enhance defense-in-depth with regard to containment integrity. Please address the merits of incorporating such a commitment.

Response 8:
As noted above in the response to Question 4, whenever the IFTS is not in use, the carriage is stored inside the Containment. To raise the carriage into the Containment, it is necessary to close the bottom gate valve and drain valve. The IFTS transfer tube is arranged such that the flap valve/fill valve and the bottom gate valve have interlocks so that both ends of the transfer tube will not be open at the same time. Once the bottom valve and drain valve are closed, the fill valve is opened and the transfer tube is filled. The flap valve is opened when sensors indicate that the transfer tube and vent pipe are filled with water. The carriage is then raised to the Containment position for storage. Administrative controls are in place (i.e., a dedicated operator stationed at the controls for the valves), whenever the blind flange is removed in Modes 1, 2, or 3 and both drain valves are not closed. Therefore, both drain valves will be closed when the IFTS is not in operation. There currently is no requirement to close the upper gate valve during periods when the IFTS is not in use. Once all transfer operations are complete, the upper gate valve is closed to support installation of the blind flange, however, this manual valve is not closed during routine shutdown periods. The upper gate valve is not necessary to ensure Containment integrity. As stated, the drain valves will be closed and the bottom gate valve is required to be closed due to interlocks with the flap valve. This ensures the necessary isolation is available. Therefore, based on the above discussion, there will always be two barriers in series (either two valves or a valve and a water seal) and the upper gate valve may be open when the system is not in use.

Question 9:
Describe the capabilities to detect leakage via the IFTS bottom gate valve, e.g., via spent fuel pool level instrumentation. Identify any related commitments that ensure these capabilities, such as commitments to operate the plant with spent fuel pool gates in certain positions.

Response 9:
As required by CPS procedure 3702.01, i.e., when the IFTS blind flange is open in Modes 1, 2, or 3, the fuel building spent fuel pool to IFTS transfer pool gate must be

removed. This gate is removed to allow the spent fuel pool low level annunciator to alarm on low level in the transfer pool. This ensures that the required level is maintained in the transfer pool to provide the necessary water seal between primary and secondary containment. Spent fuel pool level is normally checked and recorded as required by the Operational Requirements Manual, Section 4.4.8, "Spent Fuel Storage and Upper Containment Pools." Significant leakage past the bottom gate valve would be sensed in the FC surge tank and would alarm on high level in the Control Room.

For the following questions, please provide additional information concerning the systems, procedures and compensatory measures that Clinton may have to deal with the SBLOCA. During blind flange removal and with the IFTS bottom gate valve open, if a SBLOCA occurs and the containment pressure were to exceed the capability of the IFTS water seal:

Question 10:
Are there any procedures requiring operators to isolate the bottom valve? How can the operator isolate the valve? What are the power supplies needed for isolating the valve and the availability of these power supplies during the accident?

Response 10:
The bottom gate valve will only be open if the IFTS carriage is at the fill/drain position or below. In the event that the IFTS carriage is below the fill/drain position and it was necessary to close the bottom gate valve, the IFTS carriage will have to be raised due to the carriage cables running through the valve. All IFTS motive and control power will be required to raise the carriage normally. This power is from non-safety power supplies, which would not be available during a LOOP event. The carriage can still be raised manually by persons in the containment at the 828' elevation. The IFTS winch brake would be released, allowing the carriage to be hand cranked up above the bottom gate valve. Once the carriage was above the fill/drain position, the bottom gate valve can then be closed.

Question 11:
Should an accident occur while the bottom gate valve is open and the fuel transfer carriage or cables are blocking the valve from closing, what can the operator do to clear the way and close the valve? What are the power supplies needed and the availability of these supplies?

Response 11:
As described above in the response to question 10, the operator would be required to manually raise the carriage above the fill/drain position to ensure that the bottom gate valve could be closed. Non-safety power supplies would be required to do this normally. These power supplies would not be available during a LOOP event. The operator does have the capability to perform these actions manually in the event that power is not available. If the operator were required to close the valve, it would take approximately 1

to 1 ½ hours to connect a hydraulic supply to the valve actuator and locally close the valve. Equipment necessary to perform these actions will be staged in an accessible location.

Question 12:
Since the bottom gate valve is not subject to containment isolation valve leak testing, the valve can leak after being closed. Eventually, the seal could be cleared completely during a SBLOCA with containment pressures higher than the capability of the water seal. Are there any procedures that will require the operators to stop the leaking? What are the mechanisms the operators have in monitoring and tightening the leaking valve?

Response 12:
There are currently no procedures that require the operator to stop the leaking from the bottom gate valve. Even though the bottom gate valve is not subject to leakage testing, the valve must remain fairly leak tight for the IFTS to operate properly and efficiently. The FC surge tank is sensitive to changes in level, and leakage past the bottom valve would cause a high level to be sensed in the control room. If the FC surge tank overflowed, water would collect in the Fuel Building equipment/floor drain sumps, which alarm in the control room. Alarm response procedures would require the operator to investigate further the cause of the alarm. As stated in Response 11 above, a portable hydraulic supply connected to the bottom gate valve could be used to raise seating pressure and close the valve, if necessary.

Question 13:
Please confirm whether the drain line isolation valve is subject to the containment isolation valve leak testing. Confirm that the drain line piping and structure, which become the extension of the containment boundary, are adequately designed for the accident conditions.

Response 13:
The drain line isolation valves (1F42-F003, 1F42-F301) are neither tested nor included in the Primary Containment Leakage Rate Testing Program. (See response to Question 3.) As described in References 2 and 3, removal of the IFTS blind flange when primary containment operability is required will potentially subject additional portions of the IFTS to the conditions existing in a post-accident environment. The IFTS design specification does not require the entire system to meet the requirements necessary for certification as a primary containment boundary. While much of the system may not be built to the standards of primary containment boundary components (i.e., ASME, Section III, Class 2), it is nonetheless built to withstand the rigors of a commercial nuclear application (i.e., ANSI B31.1). This includes, but is not limited to, consideration of adequate seismic support, 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. The primary containment pressure following a large-break or small-break LOCA is less than the design pressure of the piping and components that

form the extension of the primary containment boundary while in this configuration. Therefore, these components will not be pressurized beyond their current design values.

REFERENCES:

(1) Letter from J. M. Heffley (AmerGen Energy Company, LLC) to U. S. NRC, "Request for Amendment to Technical Specifications to Permit Inclined Fuel Transfer System Blind Flange Removal During Power Operations," dated April 2, 2001

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

(4) Letter from R. Phares (IP) to U. S. NRC, "Clinton Power Station, Unit 1 Reactor Containment Building Integrated Leak Rate Test Final Report," dated March 3, 1994

(5) Letter from F. Spangenberg (IP) to U. S. NRC, "Reactor Containment Building Integrated Leak Rate Test," dated February 28, 1991