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August 31, 1998
PY-CEI/NRR-2300L

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

Perry Nuclear Power Plant
Docket No. 50-440
License Amendment Request Pursuant to 10 CFR 50.90:
Revision of Technical Specification Surveillance Requirement
to Allow Inclined Fuel Transfer System (IFTS) Blind Flange Removal

Ladies and Gentlemen:

Nuclear Regulatory Commission review and approval of a license amendment for the Perry Nuclear Power Plant is requested. The proposed amendment would allow the blind flange in the Inclined Fuel Transfer System (IFTS) containment penetration to be removed while primary containment is required to be OPERABLE. This will permit operation of IFTS with the plant at power to perform, for example, testing and exercising of the system prior to the start of a refuel outage. This proposed change has been developed for implementation several weeks prior to the seventh refueling outage (RF07). In order to support the necessary procedural changes, issuance of this amendment is requested by December 31, 1998.

Attachment 1 provides a Summary; Descriptions of the Proposed Technical Specification Change and of IFTS and its Operation; a Safety Analysis; and an Environmental Consideration. Attachment 2 provides the Significant Hazards Consideration. Attachment 3 provides the annotated Technical Specification page reflecting the proposed change. The annotated Bases page in Attachment 4 is provided for information only, since Bases are not a formal part of the Technical Specifications.

A001

If you have questions or require additional information, please contact Mr. Henry L. Hegrat, Manager – Regulatory Affairs, at (440) 280-5606.

Very truly yours,

Lew W Myers

Attachments

cc: NRC Project Manager
NRC Resident Inspector
NRC Region III
State of Ohio

I, Lew W. Myers, being duly sworn state that (1) I am Vice President - Nuclear, of the Centerior Service Company, (2) I am duly authorized to execute and file this certification on behalf of The Cleveland Electric Illuminating Company and Toledo Edison Company, and as the duly authorized agent for Duquesne Light Company, Ohio Edison Company, and Pennsylvania Power Company, and (3) the statements set forth herein are true and correct to the best of my knowledge, information and belief.

Lew W. Myers

Lew W. Myers

Sworn to and subscribed before me, the 31st day of August, 1998

Jane E Mott

JANE E. MOTT
Notary Public, State of Ohio
My Commission Expires Feb. 20, 2000
(Recorded in Lake County)

SUMMARY

In accordance with 10 CFR 50.90, a change to the Technical Specifications (TS) for the Perry Nuclear Power Plant (PNPP) is proposed. This will permit the Inclined Fuel Transfer System (IFTS) blind flange to be removed during MODES 1, 2, and 3. The portion of IFTS which forms a part of the primary containment boundary contains a metal bellows and a removable blind flange near the containment upper fuel pool penetration. The blind flange must be removed to permit the carriage to travel inside the transfer tube between the upper and lower pools. Since this blind flange forms part of the primary containment boundary, its removal could be considered a breach of primary containment integrity and is currently only permitted when the reactor is in a mode when the primary containment function is not required. However, as described further below, appropriate barriers will remain such that a breach of primary containment will not be a concern.

The IFTS is a complex system that remains idle during normal plant operation and is only used to support refueling activities. Currently, a complete checkout of the transfer system can not begin until the plant is shutdown for refueling and primary containment operability is not required. At that time, the blind flange can be removed and the system can be operated. Prior to that point, the IFTS will have been maintained in an idle condition for an extended period, e.g., 24 months (between refueling outages). As with any complex and intricately interlocked system that is left idle for an extended period of time, good engineering practice dictates an inspection and exercise of the IFTS components prior to operating them in continuous duty during a refueling outage. Experience during previous outages has indicated that a satisfactory checkout of the entire system, including any subsequent adjustment of sensors or system repairs, can take several days. Such experience has also been confirmed by other nuclear plants with similar IFTS and Mark III containments. The duration can create a hardship since this checkout testing can commence only when the blind flange is permitted to be removed (currently MODES 4 and 5). This could easily result in IFTS checkout testing unnecessarily becoming a "critical path" activity. A primary reason for removing the blind flange during MODES 1, 2, and 3 is to permit such testing, exercising and repairs on IFTS far enough in advance of the start of the outage to avoid such impacts.

The containment function is still maintained during periods of IFTS operation, even with the blind flange removed with the plant at power. With the blind flange removed, the potential leak path past the primary containment is through the interior of the IFTS transfer tube. The IFTS transfer tube terminates deep in the Fuel Transfer Pool in the Fuel Handling Area of the Intermediate Building (also known as the "Fuel Handling Building"). This effectively seals the tube and precludes it from becoming a potential leak path from the containment atmosphere into the Fuel Handling Building in the event of a design basis accident such as a Loss of Coolant Accident (LOCA). Another potential leakage pathway is through a small branch line off of the IFTS transfer tube. This branch line is designed for draining part of the IFTS piping down to the level of the Fuel Handling Building Fuel Pool. This is also not of concern, since a leak rate tested valve in this piping will be maintained closed (with opening permitted only under administrative controls that will ensure its re-closure if required). A leak rate test on the IFTS tube will also check other potential (but unlikely) leak paths such as past the liquid level sensors for the tube. Thus, a modification is proposed to the Perry Nuclear Power Plant Technical Specifications that would allow the blind flange of the IFTS to be removed while the plant is operating in MODE 1, 2 or 3.

This proposed change has been developed for implementation several weeks prior to the seventh refueling outage (RF07), which is currently scheduled to start on April 10, 1999. In order to support the necessary procedural changes that must be completed after issuance but before implementation, issuance of this amendment is requested by December 31, 1998.

DESCRIPTION OF THE PROPOSED TECHNICAL SPECIFICATION CHANGE

The proposed change is to TS 3.6.1.3 "Primary Containment Isolation Valves (PCIV)". When the blind flange is not installed, the IFTS penetration does not represent an uncontrolled breach of the containment boundary. Therefore, Limiting Conditions of Operation (LCOs) 3.6.1.1 "Primary Containment - Operating" and 3.6.1.3 "Primary Containment Isolation Valves" are considered to be met. However, in order to make this clear, Surveillance Requirement (SR) 3.6.1.3.4 needs to be modified , since it currently reads "verify each primary containment isolation ... blind flange that is ... required to be closed during accident conditions is closed". To do this, a new NOTE 4 (see Attachment 3) is proposed to be inserted as follows:

> "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 Handling Building Fuel Transfer Pool water level is maintained ≥ 40' and the IFTS transfer tube drain valve remains closed. The IFTS transfer tube drain valve may be opened under administrative controls."

Additionally, a paragraph will be inserted into the Bases for SR 3.6.1.3.4 to explain the justification for the additional note. The proposed paragraph is included in Attachment 4 for information only, since Bases are not a formal part of the Technical Specifications (Bases changes are processed per the Technical Specification Bases Control Program, Specification 5.5.11).

DESCRIPTION OF THE INCLINED FUEL TRANSFER SYSTEM

The IFTS shown in Figure 1 at the end of this attachment is described in subsection 9.1.4.2.3.11 of the Perry Updated Safety Analysis Report (USAR). It is used to transfer fuel, control rods, defective fuel storage containers, and other small items between the Fuel Transfer Pool in the containment and the Fuel Transfer Pool in the Fuel Handling Area of the Intermediate Building (also known as the "Fuel Handling Building") by means of a carriage traveling in an inclined transfer tube. The IFTS consists of an inclined transfer tube (20), upper and lower upenders (7 and 31), hydraulic power units, an electric powered winch (1), a carriage (24), and instrumentation required for the operation and control of the system.

The transfer tube (20) is a 23 inch I.D. stainless steel pipe and provides an enclosed path for the carriage which can be lowered or raised by the winch assembly. At the upper end of the transfer tube in the containment, the transfer tube connects to the Fuel Transfer Pool penetration and to a sheave box. Connected to the sheave box is a 24 inch flap valve, a vent pipe, cable enclosures, and a fill valve. At the lower end of the transfer tube in the Fuel Handling Building, the transfer tube connects to the bottom valve, a 24 inch gate valve. A bellows connects the Fuel Transfer Pool penetration in the Fuel Handling Building to the bottom valve and to the transfer tube to prevent water entrapment between the tube and the penetration. The transfer tube includes a valve at both ends (the flap valve and the bottom valve) and is provided with a containment isolation assembly to which the blind flange belongs. The flap valve (11) consists of a 24 inch disc with an actuating cylinder (12) and is mounted on the sheave box (14). The bottom valve is a 24 inch hydraulically operated gate valve (25).

The sheave box (14) is a multipurpose device that not only provides a means to open and close the upper end of the transfer tube by use of the flap valve (11), but also connects the two winch cable enclosure pipes (5), the vent pipe (4), and the fill valve (13). The sheave box also encloses the cable sheaves which keep the twin cables from the winch in proper parallel alignment with the carriage. Just below the sheave box, a hand-operated 24 inch gate valve (17) is provided to isolate the upper fuel pool water from the transfer tube so that the containment isolation assembly with the blind flange can be disassembled and reassembled.

The containment isolation assembly consists of two pipe spools separated by a removable blind flange (18) which is connected to the containment penetration via the bellows (19). The blind flange is designed for removal using a hinge pin and a hydraulic jack. The blind flange normally forms part of the primary containment boundary. Before the IFTS can be placed in operation, the blind flange must be removed.

At the lower end of the transfer tube, a bellows (26) connects the Fuel Transfer Pool penetration in the Fuel Handling Building to the 24 inch hydraulically operated gate valve (25) and to the transfer tube. This gate valve is supported within a valve support structure (29) in the Fuel Transfer Pool. The two sets of bellows (19) and (26) provide the transfer tube with axial movement which is also necessary during removal and reinstallation of the blind flange. The spring hanger (22) at the mid-section of the transfer tube provides deadweight support for the system assembly. Near the mid-section of the transfer tube, a 4-inch drain line and the "tube-drained" liquid level sensors are installed.

The drain line contains an automatic motor-operated valve (27) and a manually operated valve (33). The manually operated valve (33) is located in an area posted as a high radiation area. The drain line allows the water level to be lowered down to the level of the Fuel Handling Building Fuel Pool prior to opening the bottom valve and transferring the carriage and its contents to the lower Fuel Transfer Pool in the Fuel Handling Building. Drained water is directed to the Fuel Transfer Tube Drain Tank located in the Fuel Handling Building. While draining, the transfer tube is vented to the containment atmosphere through the winch cable enclosure pipes (5) attached to the sheave box at the top of the transfer tube. The winch cable enclosure pipes provides a path for the winch to raise or lower the carriage within the transfer tube while preventing upper fuel pool water from entering the drained transfer tube.

A hydraulically operated upender (7, 31) is located in the pool at each end of the transfer tube respectively. These devices are mounted on pivot arms which permit them to be rotated to a vertical position for loading and unloading the carriage, and guiding it as well. Proximity sensors are mounted on the framing which support the upenders to detect both the vertical and the inclined positions of the upenders.

The carriage (24) is a wheeled device consisting of two sections (tilt tube 24A and follower 24B) hinged together. Carriage alignment is maintained by following a track welded to the inside of the transfer tube and on each of the upenders. A winch (1), located on the containment refueling floor, uses two cables attached to the carriage section (follower, 24B) to pull the carriage and control its descent velocity. Cable enclosure pipes (5), attached to the sheave box (14) and projecting above the Fuel Transfer Pool water level in the containment, provide the means for cable exit from the transfer tube while isolating pool water from the transfer tube when it is in the drained condition.

Control panels are provided in close proximity to upper and lower pool areas and operations can be made at both locations for actuating the respective upender. The control panels are also connected for voice and interlock communications. Interlocks assure the correct sequencing of the IFTS operation. Likewise, interlocks also assure correct location of the fuel handling platforms in relation to the position of the upenders (7 & 31).

When the blind flange is installed, containment is made by the containment isolation assembly, the blind flange, the containment bellows (19) and the steel containment penetration. Special gaskets and double ply bellows are provided for leak checking to ensure containment isolation. A bellows assembly with a test connector is installed to permit confirmatory leak testing of the double ply bellows.

SAFETY ANALYSIS

The primary function for the containment is to maintain its integrity following a Design Basis loss of coolant accident (LOCA) within the structure while also accommodating the dynamic effects of the pipe break coincident with a safe shutdown earthquake. For many components in the IFTS with or without the blind flange installed, the primary differential effect will be the pressure rise as a result of a postulated Design Basis LOCA. This is because other bounding thermal and mechanical load requirements are almost identical whether the blind flange is removed or not. The additional Design Basis LOCA peak pressure load (7.8 psig) to be imposed upon the components in the IFTS if the blind flange is removed represents only a very small increase to their previously calculated loads. Thus the design of these components are more than adequate and are not a concern. Even though only a portion of the IFTS at the containment penetration point was designed and built to the newer standards for a primary containment boundary (ASME Section III, Class 2), the remainder of the tube and its drain piping is nonetheless specified and built to withstand the rigors of a commercial nuclear application (ANSI B31.1). For example, this transfer system is considered sufficiently sturdy to permit safe movement of spent fuel bundles from containment into the Fuel Handling Building (Note: this proposed change does not include allowances for IFTS to handle spent fuel bundles during periods when the plant is in MODE 1, 2 or 3). The IFTS tube itself is classified as Seismic Category I (see USAR Tables 9.1-4 and 3.9-3s). An evaluation of the seismic qualification of the drain line is being performed. Any modification to the drain line needed to adequately support the line will be completed prior to implementation of this amendment.

The containment function is still maintained during periods of IFTS operation, even with the blind flange removed with the plant at power. With the blind flange removed (including the period during removal and re-installation of the flange), the potential leak path past the primary containment is through the interior of the IFTS transfer tube. Therefore, the transfer tube, which is continually water sealed by the Fuel Handling Building Fuel Transfer Pool, was evaluated to determine if it constituted a potential leakage path from the containment atmosphere to the Fuel Handling Building atmosphere when the blind flange is removed. If the outlet of the transfer tube in the Fuel Handling Building has a submergence depth greater than the containment atmosphere peak calculated accident pressure, then there will be no direct communication between the containment atmosphere and the Fuel Handling Building atmosphere through the transfer tube. The conservatively calculated peak containment pressure as the result of a postulated design basis LOCA is 7.8 psig (see USAR Section 6.2), which is equivalent to slightly less than 19 feet of water (≈18' 9 ½"). The proposed Technical Specification value for the Fuel Handling Building Fuel Transfer Pool water level that would be administratively controlled during periods when the blind flange is removed is 40' above the bottom of the pool (see Table 1 below). This elevation provides 22' 8 ¼" of submergence down to the elevation where the bottom valve is bolted on to the end of the IFTS tube. This is approximately 3 foot 10 inches more water than necessary to address the scenario presented above for the peak post-accident containment pressure. This is more than adequate for leakage pathway protection for the transfer tube. The normal water level in this pool is even higher; it is maintained above the level of the return line (scuppers) that lead to the Fuel Pool Cooling and Cleanup System, which maintains water level for this pool. The bottom of these scuppers is at 43' 4", which provides a submergence at the elevation of the bottom valve flange of approximately 26 feet (~7 feet more than required to address the accident pressure). The water level can be monitored to verify that the proposed Technical Specification minimum water level is maintained, which in turn ensures that more than the necessary water submergence is maintained over the bottom valve. A loss of inventory substantial enough to reach the proposed Technical Specification value would be detected. There are annunciators in the control room that monitor for low storage pool level, which are set at the level of the scuppers (43' 4"). Also, operators on their plant rounds or individuals involved in the operation of IFTS would certainly detect leakage large enough to drain the pools to the proposed Technical Specification value (more than 3 feet below the normal pool level).

Table 1 Elevations

	Elevation (Sea Level Reference)	Elevation (Bottom of Pool Reference)(1)	Difference (Delta) from above value
Normal Water Level (a range)	619' 4" to 6"	43' 5" to 7"	N/A
Bottom of the Pool Scuppers (2)	619' 3"	43' 4"	3"
Low Level Alarm Setpoint	619' 3"	43' 4"	Same
Proposed Tech Spec Level Limit	615' 11"	40'	3' 4"
Top of Flange for Bottom Valve	593' 2 ¾"	17' 3 ¾"	22' 8 ¼" (3)

NOTE (1): The Alarm Response Instructions and the proposed Technical Specification use the bottom of the pool as Reference zero.

NOTE (2): These scuppers are the lowest outlet lines from the Spent Fuel Pool. Plates bolted over the scuppers provide normal water level.

NOTE (3): This value is the amount of water coverage over the bottom valve up to the proposed Technical Specification limit. This is approximately 3' 10" more water than necessary to counteract the peak post-accident pressure (7.8 psig = 18' 9 ½" of water).

There are two points in the IFTS evolutions where the water seal created by the transfer tube and the Fuel Handling Building Fuel Transfer Pool could potentially be bypassed. During the blind flange removal or re-installation, and during IFTS operation when the carriage has been lowered to the bottom portion of the transfer tube, the water in the transfer tube needs to be drained to the drain piping connection level. When the transfer tube is in this drained condition, the vent pipe (4) at the sheave box (14) connects the containment building atmosphere to the Fuel Transfer Tube Drain Tank in the Fuel Handling Building via the transfer tube drain piping. These periods are relatively short in duration and administrative controls will be in effect to ensure that the transfer tube drain piping can be rapidly isolated by closing the motor-operated drain valve (1F42-F003). These administrative controls consist of designating an individual, whenever the 1F42-F003 valve is to be opened with the blind flange removed in MODE 1, 2, or 3, to be responsible for verifying closure of the valve if an accident occurs. This designated individual will remain in continuous communication with the control room, and be located at the 620' elevation in the Fuel Handling Area of the Intermediate Building. This person will be in addition to the minimum shift crew composition required to be at the plant site. Once the designated person is notified by the control room of the occurrence of an accident, his only assigned function will be to close this valve.

The designated individual will verify the valve is closed from the controls at the IFTS panel (at elevation 620') if they are available. "Verify" is defined as ensuring that it is already closed, and if it is not, closing the valve using the valves control switch located on the control panel. Closure can be checked by the valve position lights on the panel. If this is not successful, the valve will be closed manually at the valve location. It is expected that the only reason this transfer tube drain valve would need to be closed manually is if a loss of offsite power has occurred concurrent with the accident. In such an event, power would not be available at the IFTS Panel (non-diesel-backed power to the IFTS panel).

If necessary to ensure valve closure, the designated individual can proceed to the valve location at the 599' level in the Intermediate Building (one level down from the Fuel Handling Area, which is at ground level (620')), and manually close the valve using the handwheel. No ladders are required to reach this valve. The valve can be closed expeditiously; a field walkdown determined that the manual closure evolution, including time spent at the IFTS panel and travel time, was less than 5 minutes. The post-LOCA radiological doses along the path to the valve will not cause an access problem. The conservatively calculated whole-body dose which might be received by the designated individual is ≤ 1.9 rem, which is well within the 5 rem limit of General Design Criterion 19. This whole-body dose conservatively assumes that the post-accident radiation dose rates are available at time zero. It was judged that at this stage of the accident, the airborne activity in the Intermediate Building will not be significant, and therefore, the thyroid and other internal doses would be insignificant. The designated person will be equipped with portable lighting (e.g., a flashlight) to supplement emergency lighting.

Since the designated individual would have no other function to perform once he has been notified by the control room of an accident, and he is already positioned in the plant and trained to perform his function of valve closure, the time restraints of ANSI/ANS 58.8-1984 "Time Response Design Criteria For Nuclear Safety Related Operator Actions" for an action outside the control room are not considered applicable to closure of this valve. Also, since the designated person is aware that post-accident, his only function is to close the valve, the likelihood of an omission or error in doing so is extremely unlikely. Since the valve can be closed manually, the only other failures of concern would be a mechanical binding of the valve. This has not been a problem noted in the past for this valve. This valve has not exhibited mechanical binding concerns. Such concerns would become readily apparent during IFTS operation, since this valve is stroked on a regular basis during IFTS operation. A review of work order history on this valve identified only two items, neither of which involved issues on closure capability of the valve. Also, the valve will be maintained in accordance with the Primary Containment Leakage Rate Testing Program (see commitment below), which helps to ensure its reliability and leak tightness. Appropriate USAR changes will be completed to describe the valve configuration and testing criteria for this penetration, coupled with a description of the designated individual's action.

A manual valve is located in this drain line downstream of the motor-operated valve. No credit has been taken for operation of this manual valve, since it is located another level down (574' 10" elevation), is in an area posted as a high radiation area, is approximately 11 feet above the floor, and may not be easily accessible post-accident.

The drain piping motor-operated isolation valve will be treated as a primary containment isolation valve and be added to the Primary Containment Leakage Rate Testing Program (Specification 5.5.12). This will ensure that leakage past this valve will be maintained consistent with the leakage rate assumptions of the PNPP radiological accident analysis. The leakage rate on this valve will be controlled by the strict limits on potential secondary containment bypass leakage (SR 3.6.1.3.9). Due to the test methodology, the portion of the large transfer tube piping outboard of the blind flange (the portion of the tube which becomes exposed to containment air during the draining portion of the IFTS operation) will also be part of the leakage rate test boundary and will therefore also be tested with air. Therefore, no unidentified leakage paths will exist from the piping and components that are outboard of the blind flange, and the leakage rate assumptions of the PNPP radiological accident analysis will be maintained.

The conclusions from the above discussions are

- that the period when the blind flange is removed with the plant in MODE 1, 2, or 3 (including the removal and reinstallation process), is not considered to constitute a breach of primary containment integrity or lead to inoperability of the primary containment,
- the proposed change is an acceptable alternative to having the blind flange installed, and
- the proposed containment isolation provisions provide an acceptable alternative for meeting General Design Criterion 56.

ENVIRONMENTAL CONSIDERATION

The proposed Technical Specification change request was evaluated against the criteria of 10 CFR 51.22 for environmental considerations. The proposed change does not significantly increase individual or cumulative occupational radiation exposures, does not significantly change the types or significantly increase the amounts of effluents that may be released off-site and, as discussed in Attachment 2, does not involve a significant hazards consideration. Based on the foregoing, it has been concluded that the proposed Technical Specification change meets the criteria given in 10 CFR 51.22(c)(9) for categorical exclusion from the requirement for an Environmental Impact Statement.

COMMITMENTS WITHIN THIS LETTER

The following table identifies those actions which are considered to be regulatory commitments. Any other actions discussed in this document represent current, intended or planned actions and are described for the NRC's information. Please notify the Manager - Regulatory Affairs at the Perry Nuclear Power Plant of any questions regarding this document or any associated regulatory commitments.

1. This proposed change does not include allowances for IFTS to handle spent fuel bundles during periods when the plant is in MODE 1, 2 or 3.

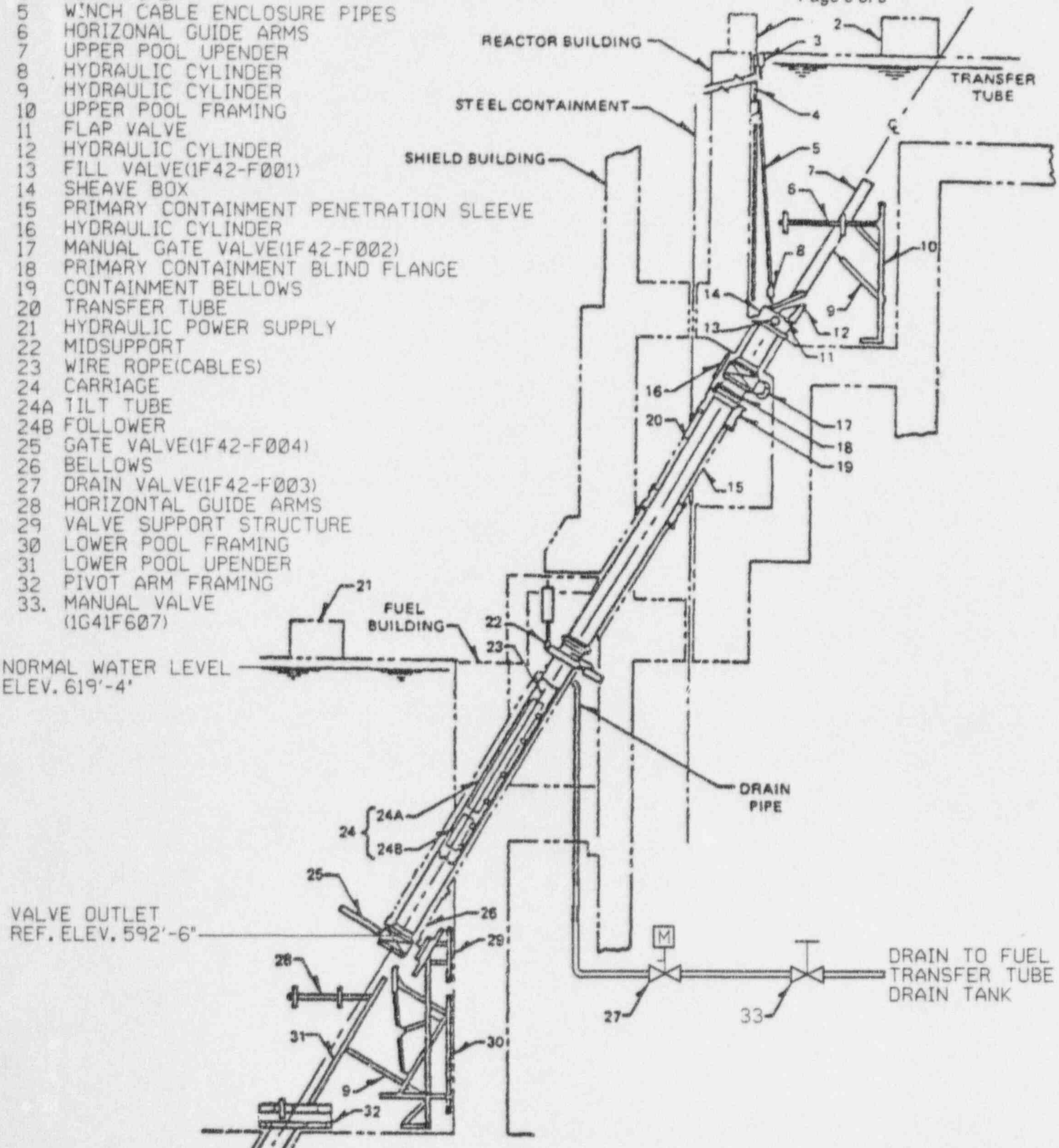
2. An evaluation of the seismic qualification of the drain line is being performed. Any modification to the drain line needed to adequately support the line will be completed prior to implementation of this amendment.

3. Administrative controls will be in effect to ensure that the transfer tube drain piping can be rapidly isolated by closing the motor-operated drain valve (1F42-F003). These administrative controls consist of designating an individual, whenever the 1F42-F003 valve is to be opened with the blind flange removed in MODE 1, 2, or 3, to be responsible for verifying closure of the valve if an accident occurs. This designated individual will remain in continuous communication with the control room, and be located at the 620' elevation in the Fuel Handling Area of the Intermediate Building. This person will be in addition to the minimum shift crew composition required to be at the plant site. Once the designated person is notified by the control room of the occurrence of an accident, his only assigned function will be to close this valve. The designated individual will verify the valve is closed from the controls at the IFTS panel (at elevation 620') if they are available. "Verify" is defined as ensuring that it is already closed, and if it is not, closing the valve using the valves control switch located on the control panel. Closure can be checked by the valve position lights on the panel. If this is not successful, the valve will be closed manually at the valve location. The designated person will be equipped with portable lighting (e.g., a flashlight) to supplement emergency lighting.

4. Appropriate USAR changes will be completed to describe the valve configuration and testing criteria for this penetration, coupled with a description of the designated individual's action.

5. The drain piping motor-operated isolation valve will be treated as a primary containment isolation valve and be added to the Primary Containment Leakage Rate Testing Program (Specification 5.5.12). This will ensure that leakage past this valve will be maintained consistent with the leakage rate assumptions of the PNPP radiological accident analysis. The leakage rate on this valve will be controlled by the strict limits on potential secondary containment bypass leakage (SR 3.6.1.3.9). Due to the test methodology, the portion of the large transfer tube piping outboard of the blind flange (the portion of the tube which becomes exposed to containment air during the draining portion of the IFTS operation) will also be part of the leakage rate test boundary and will therefore also be tested with air. Therefore, no unidentified leakage paths will exist from the piping and components that are outboard of the blind flange, and the leakage rate assumptions of the PNPP radiological accident analysis will be maintained.

1 WINCH
2 HYDRAULIC POWER SUPPLY
3 FLUID STOP
4 VENT PIPE
5 WINCH CABLE ENCLOSURE PIPES
6 HORIZONAL 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
33. MANUAL VALVE (1G41F607)



PERRY NUCLEAR POWER PLANT
THE CLEVELAND ELECTRIC ILLUMINATING COMPANY

Transfer Tube

Figure 9.1-19

SIGNIFICANT HAZARDS CONSIDERATION

The standards used to arrive at a determination that a request for amendment involves no significant hazards considerations are included in the Commission's Regulation 10 CFR 50.92, which states that the operation of the facility in accordance with the proposed amendment would not: (1) involve a significant increase in the probability or consequences of an accident previously evaluated; or (2) create the possibility of a new or different kind of accident from any accident previously evaluated; or (3) involve a significant reduction in a margin of safety.

The proposed amendment has been reviewed with respect to these three factors and it has been determined that the proposed change does not involve a significant hazard because:

(1) The proposed change does not involve a significant increase in the probability or consequences of an accident previously evaluated.

The proposed change permits removal of the blind flange on the Inclined Fuel Transfer System (IFTS) when primary containment operability is required in Modes 1, 2, and 3. This will permit operation of IFTS when the plant is operating. This aspect of the containment structure does not directly interface with the reactor coolant pressure boundary. The removal of this blind flange does not involve modifications to plant systems or design parameters that could contribute to the initiation of any accidents previously evaluated. Operation of IFTS is unrelated to the operation of the reactor, and there is no aspect of IFTS operation that could lead to or contribute to the probability of occurrence of an accident previously evaluated. Removal of the blind flange and operation of IFTS does not result in changes to procedures that could impact the probability of occurrence of an accident.

With respect to consequences, the function of the containment is to mitigate the radiological consequences of a loss of coolant accident (LOCA) or other postulated events that could result in radiation release from the fuel inside containment. The pressure and temperature transient resulting from a design basis loss of coolant accident (LOCA) is considered the primary challenge to the integrity of the containment. While the proposed change does not change the plant design, it does permit alteration of the containment boundary for the IFTS penetration. Altering the containment boundary in this case (removing the blind flange) results in some IFTS components possibly seeing a containment pressure rise should a LOCA occur. The thermal and mechanical load requirements do not appreciably change as a result of such a small pressure increase (peak post-accident pressure (P_a) of 7.8 psig). The IFTS components will be more than adequate and capable of withstanding the Design Basis LOCA and associated loads prior to implementation of this amendment. Therefore they are considered an acceptable barrier to prevent uncontrolled release of post-accident fission products for this proposed change.

The proposed change required examination of two potential leakage pathways. The larger is the transfer tube itself, the other, much smaller one, is the drain piping. It is clear that the gate valve at the bottom of the transfer tube is always water sealed and maintained so by the submergence of the water in the transfer tube and in the

Fuel Handling Building Fuel Transfer Pool. The height of this water seal is greater than that necessary to prevent leakage from the bottom of the transfer tube during accidents that result in the calculated peak post-accident pressure (P_a). The potential leakage pathway from the drain piping which attaches to the transfer tube will be isolated if required, via administrative controls on the drain piping isolation valve. Additionally, the drain piping isolation valve will be added to the Primary Containment Leakage Rate Testing Program (Specification 5.5.12) to ensure that leakage past this valve will be maintained consistent with the leakage rate assumptions of the accident analysis. Due to the test methodology, the portion of the large transfer tube piping outboard of the blind flange (the portion of the tube which becomes exposed to containment air during the draining portion of the IFTS operation) will also be part of the leakage rate test boundary and will therefore also be tested with air. Therefore, no unidentified leakage paths will exist from the piping and components that are outboard of the blind flange, and the leakage rate assumptions of the accident analysis will be maintained.

Therefore, the proposed change does not result in a significant increase in the probability or the consequences of previously evaluated accidents.

(2) The proposed change would not create the possibility of a new or different kind of accident from any accident previously evaluated.

The proposed change consists of the removal of a passive component which is not part of the primary reactor coolant pressure boundary nor involved in the operation or shutdown of the reactor. Being passive, its presence or absence does not affect any of the parameters or conditions that could contribute to the initiation of any incidents or accidents that are created from loss of coolant or positive reactivity. Re-aligning the boundary of the primary containment to include portions of the IFTS is also passive in nature and therefore has no influence on, nor does it contribute to the possibility of a new or different kind of incident, accident or malfunction from those previously analyzed. Furthermore, operation of IFTS is unrelated to the operation of the reactor and there is no mishap in the process that can lead or contribute to the possibility of losing any coolant in the reactor or introducing the chance for positive or negative reactivity or other accidents different from and not bounded by those previously evaluated.

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

(3) The proposed change will not involve a significant reduction in the margin of safety.

The proposed change involves the re-alignment of the primary containment boundary by removing the blind flange which is a passive component. The margin of safety that has the potential of being impacted by the proposed change involves the dose consequences of postulated accidents which are directly related to potential leakage through the primary containment boundary. The potential leakage pathways due to the proposed change have been reviewed, and leakage can only occur from the administratively controlled IFTS transfer tube drain piping. An individual will be designated to provide timely isolation of this drain piping during the durations of time when this proposed change is in effect. The conservatively calculated dose which might be received by the designated individual while isolating the drain piping is ≤ 1.9 rem, well within the guidelines of General Design Criterion 19. Furthermore, the drain piping isolation valve will be added into the Primary Containment Leakage Rate Testing Program (Specification 5.5.12) to ensure that leakage from the piping and components located outboard of the blind flange will be maintained consistent with the leakage rate assumptions of the accident analysis. Therefore, the dose consequences of an event would be unchanged, and the associated margin of safety would also be unchanged.

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

Based on the above considerations, it is concluded that a significant hazard would not be introduced as a result of this proposed change. Also, since NRC approval of this change must be obtained prior to implementation, nc unreviewed safety question can exist.