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U-602508
L47-95(12-14)LP
8E.100a
JGC-526-95
December 14, 1995

Docket No. 50-461

10CFR50.90

Document Control Desk
Nuclear Regulatory Commission
Washington, D.C. 20555

Subject: Clinton Power Station Proposed Amendment of Facility Operating License No. NPF-62 (NS-95-017)

Dear Sir:

Pursuant to 10CFR50.90, Illinois Power (IP) hereby applies for amendment of Facility Operating License No. NPF-62, Appendix A - Technical Specifications, for Clinton Power Station (CPS). This request consists of various proposed changes to the Technical Specifications for instrumentation associated with the High Pressure Core Spray System, Reactor Core Isolation Cooling System, and the Residual Heat Removal System.

A description of the proposed changes and the associated justification (including a Basis For No Significant Hazards Consideration) are provided in Attachment 2. Marked-up copies of the affected pages from the current Technical Specifications are provided in Attachment 3. In addition, marked-up copies of the affected pages from the CPS TS Bases are provided in Attachment 4. Upon approval of this request by the NRC, IP will revise the CPS TS Bases in accordance with CPS TS 5.5.11, "Technical Specification Bases Control Program," to reflect the changes provided in Attachment 4. Further, an affidavit supporting the facts set forth in this letter and its attachments is provided in Attachment 1.

IP has reviewed the proposed changes against the criteria of 10CFR51.22 for categorical exclusion from environmental impact considerations. The proposed change does not involve a significant hazards consideration, or significantly increase individual or

cumulative occupational radiation exposures. Based on the foregoing, IP concludes that the proposed changes meet the criteria given in 10CFR51.22(c)(9) for a categorical exclusion from the requirement for an Environmental Impact Statement.

Sincerely yours,

J. G. Cook
Vice President

AJP/csm

Attachments

cc: NRC Clinton Licensing Project Manager
NRC Resident Office, V-690
Regional Administrator, Region III, USNRC
Illinois Department of Nuclear Safety

Attachment 1
to U-602508

J. G. Cook, being first duly sworn, deposes and says: That he is Vice President of Illinois Power; that the application for amendment of Facility Operating License NPF-62 has been prepared under his supervision and direction; that he knows the contents thereof; and that to the best of his knowledge and belief said letter and the facts contained therein are true and correct.

Date: This 14 day of December 1995.

Signed: _____
J. G. Cook

STATE OF ILLINOIS) SS.
DeWitt COUNTY)

"OFFICIAL SEAL"
Jacqueline S. Matthias
Notary Public, State of Illinois
My Commission Expires 11/24/97

Subscribed and sworn to before me this 14th day of December 1995.

_____
(Notary Public)

Background

This submittal consists of several proposed changes to the Clinton Power Station (CPS) Technical Specifications (TS) related to instrumentation. The proposed changes are required due to engineering reanalyses or plant modifications. The affected instrumentation includes: (1) steam line flow high channels for the Reactor Core Isolation Cooling (RCIC) System which have been impacted by plant modification, (2) ambient temperature channels in the Residual Heat Removal (RHR) System heat exchanger room(s) which have also been impacted by plant modification, (3) reactor vessel pressure channels that provide a permissive for operation of the shutdown cooling mode of the RHR system which have been impacted due to revision of the associated setpoint calculation to address concerns related to NRC Generic Letter (GL) 89-10, "Safety-Related Motor Operated Valve Testing and Surveillance," and (4) RCIC storage tank water level instrument channels which have also been impacted by revision of the associated setpoint calculation.

Description of Proposed Change

In accordance with 10CFR50.90, the following changes to the CPS TS are being proposed:

(1) Revise the descriptions for 3.a and 3.i of TS Table 3.3.6.1-1, "Primary Containment and Drywell Isolation Instrumentation," such that the former would be identified as "Auxiliary Building RCIC Steam Line Flow-High" and the latter would be identified as "Drywell RCIC Steam Line Flow-High",

(2) Delete the present Function 3.h, "RHR Heat Exchanger Ambient Temperature - High" from Table 3.3.6.1-1,

(3) Change the Allowable Value as given in Table 3.3.6.1-1 for Function 5.e ("Reactor Vessel Pressure-High") from ≤ 150 psig to ≤ 110 psig, and

(4) Change the Allowable Value for Table 3.3.5.1-1, "Emergency Core Cooling System Instrumentation," Function 3.d and Table 3.3.5.2-1, "Reactor Core Isolation Cooling Instrumentation," Function 3 ("RCIC Storage Tank Level-Low") from ≥ 0 inches to ≥ 2.50 inches.

The proposed TS changes are reflected on a marked-up copy of the affected pages from the CPS TS in Attachment 3. (NOTE: The marked-up pages in Attachment 3 include a mark-up of the heading to Table 3.3.6-1 where the total number of table pages is indicated. The mark-up is a correction to reflect the fact that Table

3.3.6.1-1 is comprised of a total of six pages (vice the currently but incorrectly indicated seven pages). This heading change was submitted as part of a previous TS change request (IP letter U-602498 dated October 27, 1995) for which approval is pending at the time of this submittal).

Justification for Proposed Change

This submittal consists of several proposed changes to the CPS TS related to instrumentation. The changes are required due to engineering reanalyses or plant modifications. The affected instrumentation includes: (1) the steam line flow instrument channels that formerly provided a trip of the RCIC system in response to a high steam flow condition in piping common to the RCIC and RHR systems (for intended use of the steam condensing mode of operation), (2) the ambient temperature channels in the RHR heat exchanger room(s) that currently provide automatic isolation capability for the RHR and RCIC system in the event of a high temperature condition (steam leak) in the room(s), (3) the reactor vessel pressure instrument channels that provide a permissive for operation of the shutdown cooling mode of RHR, and (4) the RCIC storage tank water level instrument channels that provide a trip for transfer of the RCIC and High Pressure Core Spray (HPCS) System suctions to the suppression pool in the event of low water level in the RCIC storage tank. Each of these changes is further discussed below.

RCIC Steam Line Flow Instrumentation

During the initial licensing of CPS, IP informed the NRC of its intent to not utilize the steam condensing mode of RHR. Administrative controls were promptly established to preclude its use. Subsequently, a plant modification (RH-033) was implemented to permanently disable the steam condensing mode. This modification included changes to the piping originally intended to route reactor steam to the RHR heat exchanger from the RCIC steam supply piping. Specifically, the connecting piping (spool pieces) was eliminated and was flanged off within the Auxiliary Building steam tunnel to permanently preclude use of the steam condensing mode for RHR.

The RCIC system is designed such that automatic isolation is effected in the event of a break in the associated steam piping. This capability is provided via flow sensors (flow elbows) in two different locations of the RCIC steam supply piping. One set of sensors is located in the larger-diameter (eight-inch) portion of the RCIC steam supply piping upstream of the former connection to the piping from the RHR heat exchanger. Another set is located downstream of the former RHR/RCIC steam connection where the RCIC steam supply reduces to a smaller diameter (four inches). The steam line flow instrumentation was provided to detect a break of the RCIC steam line and initiate closure of the RCIC steam supply line isolation valves. Originally, the sensors located in the eight-inch portion of the RCIC steam supply piping were also designed to effect automatic

isolation of the RCIC system in the event of a line break in the piping that branched off the RCIC piping to the RHR heat exchanger. To stop steam from continuing to flow out of the break, the isolation is initiated on high flow to thus prevent or minimize damage to the reactor core. Specific credit for this function is not assumed in any USAR accident analyses since the bounding analysis is performed for large breaks such as the reactor recirculation line and main steam line breaks. However, these instruments prevent the RCIC steam line break from becoming bounding.

As noted previously, a plant modification eliminated the branch connection from the RCIC steam supply piping to the RHR heat exchanger which was originally designed to permit the RHR system to be used in the steam condensing mode of operation. It should be noted that evaluation of that plant modification included an evaluation of the upstream and downstream steam line flow sensors and that, despite the elimination of the steam flow path to the RHR heat exchanger, this evaluation determined that both sets of flow sensors should remain in place to continue to provide automatic isolation capability for the spectrum of line breaks that may be postulated to occur in the RCIC steam supply piping in either the eight-inch or four-inch portion of the piping. In addition, the current setpoints are sufficient to perform this safety function. As a result, there is no change to the associated trip setpoints or Allowable Values.

Section 3 of TS Table 3.3.6.1-1 lists the various instrumentation trip Functions for automatic isolation of the RCIC system. The "RCIC Steam Line Flow-High" trip channels are listed as Function "a," and the "RCIC/RHR Steam Line Flow-High" trip channels are listed as Function "i." The RCIC Steam Line Flow-High instrument channels (Function "a") provide the trip that originates from instrument flow channel differential pressure sensing nozzles in the downstream (Auxiliary Building) four-inch RCIC line. The RCIC Steam Line Flow-High" instrument channels (Function "i") provide the trip that originates from instrument flow channel differential pressure sensing nozzles in the upstream (Drywell) eight-inch RCIC line. As noted above, this instrumentation (Functions "a" and "i") is still in place and will continue to monitor RCIC steam flow and provide automatic isolation capability of the RCIC system. Thus, these instrument trip functions need to continue to be listed in Section 3 of Table 3.3.6.1-1. However, because there is no longer steam line piping common to the RCIC and RHR systems, it is inappropriate for the Function "i" to be identified as "RCIC/RHR Steam Line Flow-High" since this instrumentation now only monitors RCIC steam line flow. Merely deleting the "/RHR" portion of the Function description would render Function "i" indistinguishable from Function "a." IP therefore proposes to revise the descriptions for Functions "a" and "i" such that Function "a" would be identified as "Auxiliary Building RCIC Steam Line Flow-High" and Function "i" would be identified as "Drywell RCIC Steam Line Flow-High." These descriptions are based on the physical location of the flow sensors associated with each trip channel and would bring the TS into conformance with the CPS as-built design (as modified by plant modification RH-033).

The RCIC steam line flow trips will continue to operate as before for both trip Functions. The drywell RCIC steam line flow-high isolation trip as described in Table 3.3.6.1-1 Function "i" will continue to isolate the RCIC system when steam flow through the eight-inch RCIC steam supply line exceeds the trip level. The Auxiliary Building RCIC steam line flow-high isolation trip as described in Table 3.3.6.1-1 Function "a" will continue to isolate the RCIC system when steam flow through the four-inch RCIC steam supply line exceeds the trip level. The "Drywell RCIC Steam Line Flow-High" instrument includes two input channels with each channel in one trip system. Each of the two trip systems is connected to one of the two isolation valves on each RCIC penetration so that operation of either trip system isolates the penetration. Shutting the primary containment isolation valves upon initiation of a trip signal, in combination with the other accident mitigation systems will limit fission product release during and following a postulated Design Basis Accident.

Ambient Temperature Monitoring Instrumentation

Ambient temperature monitoring instrumentation is provided in the RHR heat exchanger room(s) to detect and isolate a leak from the associated RHR piping. Under the original design (that supported use of the steam condensing mode of operation) this trip function would automatically isolate the RHR system as well as the RCIC system in the event of a leak in the RHR heat exchanger room since, during the onset of such a leak, steam could be being supplied by the RCIC steam supply piping during the steam condensing mode of operation of the RHR system. Changes made to the plant during plant modification RH-033 as discussed above, have removed the connection from RCIC to RHR. Thus, the RHR ambient temperature isolation signal need only isolate the RHR system since there is no longer a possibility for RCIC piping to leak steam into the RHR room. Accordingly, the RHR ambient temperature isolation trip will be changed to only isolate the RHR supply line when the RHR ambient temperature setpoint is exceeded. Also, as there is no longer a possibility that the RCIC steam supply line can supply any steam to the RHR heat exchanger room, removing the RHR room ambient temperature input will preclude the possibility of spurious isolation of the RCIC system due to high temperature in a RHR heat exchanger room. IP therefore proposes to delete the present Function 3.h, "RHR Heat Exchanger Ambient Temperature - High," from Table 3.3.6.1-1 because of the described piping changes made during plant modification RH-033. High RHR room ambient temperature will continue to isolate the RHR System.

Reactor Vessel Pressure Instrumentation

The RHR Shutdown Cooling System, Reactor Vessel Pressure - High Function is provided to isolate the shutdown cooling portion of the RHR system. Since the RHR shutdown cooling system piping is designed for pressures less than rated reactor vessel pressure, the interlock (RHR cut-in permissive) was originally provided for equipment

protection to prevent an intersystem LOCA, though credit for the interlock is not assumed in the accident or transient analyses in the USAR. The Allowable Value for this interlock is currently specified as ≤ 150 psig per Table 3.3.6.1-1, Function 5.e. However, because of assumptions IP made in response to NRC Generic Letter (GL) 89-10, IP will use a lower Allowable Value for the Reactor Vessel Pressure - High trip function. (The Allowable Value for the RHR cut-in pressure establishes the differential pressure at which the RHR suction valves must close in the event of a piping break downstream of the suction valves.) IP thus proposes to change the Reactor Vessel Pressure - High Allowable Value as given in Table 3.3.6.1-1 Function 5.e to ≤ 110 psig. This new Allowable Value is more conservative with respect to considerations for shutting the shutdown cooling motor-operated valves and providing protection from overpressurizing the low pressure RHR shutdown cooling system piping.

RCIC Storage Tank Level Instrumentation

Low water level in the RCIC storage tank indicates the unavailability of an adequate supply of makeup water from this normal source for the HPCS and RCIC systems. Normally, the suction valves between HPCS and the RCIC storage tank are open and, upon receiving a HPCS initiation signal, water for HPCS injection would be taken from the RCIC storage tank. However, if the water level in the RCIC storage tank falls below a preselected level, first the suppression pool suction valve automatically opens, and then the RCIC storage tank suction valve automatically closes. This insures that an adequate supply of makeup water is available to the HPCS pump. The RCIC suction operates in a similar manner using different instrumentation from that described for the HPCS system. With RCIC storage tank water level within its acceptable limit, a sufficient supply of water exists for injection to minimize the consequences of a vessel draindown event.

Formerly, the Allowable Value for the RCIC storage tank Level - Low Function did not include consideration of the potential for a loss of pump head due to vortexing in the RCIC tank. IP has calculated a more conservative Allowable Value to address this concern. To provide additional margin for this concern, the Allowable Value for the RCIC Storage Tank Level-Low instrumentation identified on Table 3.3.5.1-1 Function 3.d and Table 3.3.5.2-1 Function 3.d is being conservatively changed from ≥ 0 inches to ≥ 2.50 inches. Although the Allowable Value has been changed, the low level setpoint remains unchanged. Calculation by IP based on design and actual instrument drift shows that the margin between the new allowable value and the unchanged low level setpoint is adequate. Therefore, the usable volume (125,000 gallons) of the RCIC tank is unchanged. In addition, no credit is taken for the volume in the RCIC storage tank for the HPCS or RCIC systems in performing their safety-related functions.

Basis for No Significant Hazards Determination

In accordance with 10CFR50.92, a proposed change to the Operating License (Technical Specifications) involves no significant hazards considerations if operation of the facility in accordance with the proposed change would not: (1) involve a significant increase in the probability or consequences of any 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 changes are evaluated against each of these criteria below.

(1) None of the proposed changes involve a significant increase in the probability or consequences of any accident previously evaluated. The changes to Table 3.3.6.1-1 Functions 3.a and 3.i are administrative in nature and bring the TS into conformance with the CPS as-built design. The RCIC steam line flow trip Function names have been changed to reflect the elimination of the RHR steam condensing mode. However, these trips have not been physically altered and thus will continue to operate as before. As a result of the elimination of the RHR steam condensing mode, the possibility of a leak in the RCIC steam supply resulting in an increase in the RHR heat exchanger room ambient temperature has also been eliminated. Accordingly, the RHR ambient temperature isolation trip is changed to only isolate the RHR system when the RHR heat exchanger room ambient temperature setpoint is exceeded. The Shutdown Cooling System Reactor Vessel Pressure - High function is provided to isolate the shutdown cooling portion of the RHR system since this piping is designed for pressures lower than rated reactor vessel pressure. This interlock (RHR cut in permissive) is provided only for equipment protection to prevent an intersystem LOCA scenario and credit for the interlock is not assumed in the accident or transient analysis in the USAR. The proposed change to the setpoint (Allowable Value) is conservative with respect to considerations for shutting the RHR shutdown cooling motor-operated valves and providing overpressurization protection for the low pressure RHR shutdown cooling system piping. With respect to the RCIC storage tank water level setpoints, no accident or transient analysis takes credit for the volume of water in the RCIC storage tank. In addition, the setpoint (Allowable Value) has been changed to ensure RCIC system operation is not adversely affected by a low level in the storage tank.

The proposed changes do not affect any of the parameters or conditions that contribute to initiation of any accidents previously evaluated. In addition, the proposed changes do not affect the ability of the associated instrumentation to operate as assumed in the safety analyses. As a result, the proposed changes will not result in a significant increase in the consequences of any accident previously evaluated.

(2) None of the proposed changes create the possibility of a new or different kind of accident from any accident previously evaluated. The proposed changes for RHR/RCIC Steam Line Flow - High is administrative in nature and will simply make this item description accurate. The RCIC steam supply line no longer supplies any steam to the RHR heat exchanger room. As a result, the associated isolation of the RCIC system is no longer required. The Shutdown Cooling System Reactor Vessel Pressure - High function will still perform as designed. The RCIC Storage Tank Level - Low trip will continue to perform in accordance with design. None of the above listed changes will introduce any new failure modes or changes in plant operation. As a result, the proposed changes cannot create the possibility of a new or different kind of accident from any accident previously evaluated.

(3) None of the proposed changes involve a significant reduction in a margin of safety. The proposed changes for RHR/RCIC Steam Line Flow - High do not involve a significant reduction in a margin of safety because the change is administrative in nature and will simply make the descriptions accurate and consistent with completed modifications. The elimination of RCIC system isolation in response to a high RHR room ambient temperature is no longer required due to the elimination of the RHR steam condensing mode. Removing the RHR room ambient temperature isolation of the RCIC will reduce the number of unnecessary isolations of RCIC. The Shutdown Cooling System Reactor Vessel Pressure - High function will still perform as designed. The proposed change to the setpoint (Allowable Value) is conservative with respect to considerations for shutting the RHR shutdown cooling motor-operated valves and providing overpressurization protection for the low pressure RHR shutdown cooling system piping. The Allowable Value for the RCIC Storage Tank Level Storage Tank Level - Low Function has been changed to be more conservative to ensure the RCIC and HPCS systems will perform their system safety function. No credit is taken for the volume in the RCIC storage tank for the HPCS or RCIC systems in performing their safety-related functions.

Based on the foregoing, IP concludes that this request does not involve a significant hazards consideration.