

# ILLINOIS POWER

CLINTON POWER STATION, P.O. BOX 678, CLINTON, ILLINOIS 61727

U-601841  
L47-91(05-15 )-LP  
8E.100a

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May 15, 1991

10CFR50.91(a)(5)

Docket No. 50-461

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

Subject: Request for Emergency Technical Specification  
Change Regarding Action Statement for Primary  
Containment Isolation Valve Position Indication

Dear Sir:

Events have occurred at Clinton Power Station (CPS) which require your attention as Illinois Power (IP) requests an emergency Technical Specification change pursuant to 10CFR50.91(a)(5). This request involves a proposed change to the Action Statement of Technical Specification 3.3.7.5, "Accident Monitoring Instrumentation," for inoperable primary containment isolation valve position indication.

During the performance of a routine functional test of Main Steam Isolation Valve (MSIV) dual solenoid valves on May 4, 1991, main control room operators observed that the normal position indication for inboard MSIV 1B21-F022D did not properly indicate that the valve had closed when the valve was stroked to the closed position. That is, although the valve was verified to have closed based on zero steam flow in the associated steam line, the position indication for 1B21-F022D remained in an intermediate condition. The problem has been traced to a malfunctioning limit switch which provides the "open" position signal for indication in the Main Control Room.

With one channel of the valve position indication instrumentation inoperable, the applicable Action Statement under CPS Technical Specification 3.3.7.5 requires that the inoperable channel be restored to OPERABLE status within 30 days; otherwise a plant shutdown must be effected. The malfunctioning limit switch is located on the inboard MSIV for the "D" main steam line. Due to its location in the drywell, repair cannot be performed during plant operation. As a result, repair work cannot be completed within the time required by the current Technical Specification Action Statement.

ADD

The inoperable position indication has in no way impacted the capability of the associated MSIV to perform its required safety functions; in fact, the valve itself continues to meet all its requirements for operability. In addition, a planned alternate method has been developed for determining the post-accident isolation status of the associated containment penetration should primary containment isolation become necessary. Therefore, in view of the circumstances in this situation and since continued operation with the inoperable position indication channel will not impact the ability to isolate the primary containment should it become necessary, IP is requesting a proposed change to the Action Statement of Technical Specification 3.3.7.5 that would permit continued plant operation until the next plant shutdown.

During IP's evaluation of the above event, it became apparent that a change to CPS Technical Specification 3.3.7.5 would be required to prevent an unnecessary plant shutdown not only for this event but also in the event of a similar occurrence in the future. There are a number of containment isolation valves which are inaccessible during plant operation, and therefore, under the current Action Statement, when one or more position indication channels become inoperable for one of these valves, (due, for example, to a problem with the limit switch on the valve) a plant shutdown would be required. Since inoperable position indication alone does not impact the operability of the associated containment isolation valve and since an alternate method can usually be developed to determine the isolation status of the applicable containment penetration, it does not seem reasonable to require a plant shutdown in such cases. IP therefore proposes to change CPS Technical Specification 3.3.7.5 Action 82 to permit continued plant operation with one or both position indication channel(s) inoperable provided the inoperability is due to a failure which is inaccessible during plant operation and a planned alternate method for determining the post-accident isolation status of the associated containment penetration is implemented. In the event an alternate method for determining isolation status of the containment penetration cannot be established, a plant shutdown must be effected.

In summary, IP believes that this condition constitutes an emergency situation as described in 10CFR50.91(a)(5) in that failure to act in a timely manner would result in a shutdown of the plant. Prompt NRC review and approval of this proposed Technical Specification change would allow IP to avoid a plant shutdown to repair a component whose failure has minimal impact on plant safety and for which the problem can be adequately compensated through the use of an alternate


method of determining the isolation status of this containment penetration. In addition, this failure was unforeseeable, particularly in view of the fact that the position indication instrumentation was proven to be working satisfactorily by the completion of previously performed surveillance tests utilizing this position indication. Accordingly, IP requests that the aforementioned proposed Technical Specification change be reviewed on an emergency basis in accordance with 10CFR50.91(a)(5).

A detailed description of and justification for the proposed change, including the basis for no significant hazards consideration, are provided in Attachment 2 to this letter. In addition, an affidavit supporting the facts set forth in this letter and its attachments is provided in Attachment 1.

IP has reviewed this request against the criteria of 10CFR51.22 for categorical exclusion from environmental impact considerations. This request does not involve a significant hazards consideration, or significantly increase the amounts or change the types of effluents that may be released offsite, nor does it significantly increase individual or cumulative occupational radiation exposures. Based on the foregoing, IP concludes that this request meets the criteria given in 10CFR51.22(c)(9) for a categorical exclusion from the requirement for an Environmental Impact Statement.

Your prompt attention in this matter is greatly appreciated.

Sincerely yours,

  
J. S. Perry  
Vice President

TAB/alh

Attachment

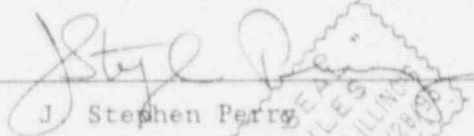
cc: NRC Clinton Licensing Project Manager  
NRC Resident Office  
NRC Region III, Regional Administrator  
Illinois Department of Nuclear Safety

STATE OF ILLINOIS  
COUNTY OF DEWITT

J. Stephen Perry, being first duly sworn, deposes and says: That he is Vice President of Illinois Power Company; 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 application and the facts contained therein are true and correct.

DATE: This 15 day of May 1991

Signed: \_\_\_\_\_

  
J. Stephen Perry

Subscribed and sworn to before me this \_\_\_\_\_ day of May 1991.

  
\_\_\_\_\_  
Notary Public

## Background

CPS Technical Specification 3/4.3.7.5, "Accident Monitoring Instrumentation," identifies and prescribes requirements for instrumentation intended to provide information for monitoring and assessing important plant parameters following an accident. Guidance concerning the capability of such instrumentation and which parameters should be monitored was provided in Regulatory Guide 1.97, "Instrumentation for Light Water Cooled Nuclear Power Plants to Assess Plant Conditions During and Following an Accident," May 1983; and NUREG-0737, "Clarification of TMI Action Plan Requirements," November 1980. Guidance concerning the Technical Specifications which should be included for accident monitoring instrumentation was provided by Generic Letters 83-02 and 83-36 (subject: NUREG-0737 Technical Specifications) and by the Standard Technical Specifications (STS) [Proposed Rev. 4, GE-STs (BWR 6)].\*

The instrumentation addressed by CPS Technical Specification 3.3.7.5 as identified on Table 3.3.7.5-1 includes primary containment isolation valve position indication. The purpose of this instrumentation (as described in Regulatory Guide 1.97) is to provide operators with an indication of whether or not containment isolation has been accomplished (i.e., whether each associated valve is closed or not closed) during or following an accident which requires containment isolation.

In prescribing the number of channels that must be available or OPERABLE for each particular variable or type of instrument, Table 3.3.7.5-1 contains two columns prescribing the "Required Number of Channels" as well as the "Minimum Channels [required to bc] OPERABLE." To prescribe what action is to be taken when one or more channels are inoperable, the Action Statements are generally subdivided to address having less than the Required Number of Channels or having fewer channels OPERABLE than required by the Minimum Channels OPERABLE requirement.

For the primary containment isolation valve position indication instrumentation, Table 3.3.7.5-1 specifies that (for each valve) two primary containment isolation valve position indication channels must be OPERABLE to satisfy the Required Number of Channels requirement and that at least one channel must be OPERABLE to satisfy the Minimum Channels OPERABLE requirement. A note associated with Table 3.3.7.5-1 defines (for each valve) one channel as the limit switch providing "open" indication and the other channel as the limit switch providing "closed" indication. Corresponding Action 82 (Part "a") requires that with the number of OPERABLE containment isolation valve position indication

\* It may be noted that the documents did not specifically address primary containment isolation valve position indication instrumentation as this instrumentation was incorporated later into plants' Technical Specifications.



channels less than the Required Number of Channels (i.e., with one channel inoperable), the valve position must be verified by use of alternate indication methods, and the inoperable channel must be restored to OPERABLE status within 30 days or the plant must be in HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours. Action 82 (Part "b") also requires that with the number of OPERABLE containment isolation valve position indication channels less than the Minimum Channels OPERABLE requirement (i.e., with both channels inoperable), the valve position must be verified by use of alternate indication methods, and the inoperable channels must be restored to OPERABLE status within 7 days or the plant must be in HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.

#### Reason for Proposed Change

As noted above, Action 82 currently requires that, in the event one or both containment isolation valve position indication channels become inoperable, a plant shutdown must be effected if the inoperable channel(s) cannot be restored to OPERABLE status within the specified time limit (which depends on the number of channels inoperable). This is an unnecessary requirement in light of the fact that valve operability is unaffected by the inoperability of the associated position indication instrumentation and that, notwithstanding, alternate means are available in many cases, to determine a valve's position even under accident/post-accident conditions. With respect to accident monitoring capability, the basis for requiring position indication, according to NUREG-0737 and Regulatory Guide 1.97, is to enable verification or determination that containment isolation has been effected. Emphasis should thus be placed on being able to determine the post-accident isolation status of the penetration and not just the valve itself in assessing alternate means to verify containment isolation. An additional and very important concern is that many containment isolation valves are located in areas that are inaccessible during normal plant operation. If, for example, channel inoperability is the result of a problem with the limit switch at the valve, a plant shutdown to effect repairs may not be avoidable due to the inaccessibility of the affected component.

The proposed change (described later in more detail) would minimize the potential for an unnecessary plant shutdown due to inoperable position indication instrumentation which cannot be repaired during plant operation. The proposed change would permit continued plant operation with one or both position indication channels inoperable (if the location of the problem causing the inoperability is inaccessible) provided the position of the containment isolation valve is known and alternate means can be utilized to determine/verify the isolation status of the affected containment penetration under post-accident conditions.

Description of and Justification for Proposed Change

As indicated above, IP proposes to revise Action 82 to permit continued plant operation with an inoperable containment isolation valve position indication channel(s) provided the valve's position is known and alternate means are available to enable determination of the post-accident isolation status of the affected containment penetration(s) consistent with the intent of NUREG-0737 and Regulatory Guide 1.97. The specific changes to the Technical Specifications required to achieve this result are indicated on the attached marked-up page from the CPS Technical Specifications (see pages 7 and 8 of this attachment) and are discussed below.

To revise Action 82, IP proposes to add a footnote ("\*") which reads as follows:

If the location(s) of failure is inaccessible during plant operation, operation may continue provided that a planned alternate method for determining the post-accident isolation status of the associated containment penetration(s) is implemented. The provisions of Specification 3.0.4 are applicable if this alternative is utilized.

The asterisk would appear just after the words "restore the inoperable channel(s) to OPERABLE status within 30 days" in part "a" of Action 82, and just after the words "restore the inoperable channel(s) to OPERABLE status within 7 days" in part "b" of the Action. The effect of the note is to allow a plan to be established that would identify what means would be available to determine the isolation status of the associated containment penetration under accident/post-accident conditions in lieu of requiring a plant shutdown in the event the inoperable position indication instrumentation cannot be restored to OPERABLE status within the required time limit. This alternative, IP believes, is consistent with the intent of NUREG-0737 and Regulatory Guide 1.97 and serves as an acceptable compensatory measure to permit continued plant operation. Alternate means could include consideration of certain process variables such as flow or differential pressure and whether or not the other automatic isolation valve(s) associated with the particular penetration has OPERABLE position indication. If no plan identifying a reliable, alternate means of determining the post-accident isolation status of the affected penetration can be established, a plant shutdown would be required.

Since Action 82 (part "c") contains an exception to the provisions of Technical Specification 3.0.4, the proposed footnote includes a statement that defines the applicability of Specification 3.0.4 when position indication is inoperable and a plan is established to utilize alternate means of determining the post-accident isolation status of the affected penetration. With the applicability of Specification 3.0.4 defined as proposed, inoperable position indication must be restored to OPERABLE

status prior to plant restart if the proposed footnote had been utilized to permit continued plant operation prior to shutdown.

It should finally be noted that although the proposed change may impact the availability of the normal position indication instrumentation associated with automatic containment isolation valves, the proposed change has no impact on the operability of the containment isolation valves themselves. That is, the design capability of automatic containment isolation valves to effect containment isolation in response to an accident or conditions requiring automatic containment isolation is unaffected by the proposed change. Automatic containment isolation would occur irrespective of the status or condition of the position indication instrumentation associated with the containment isolation valves.

#### Basis For No Significant Hazards Consideration

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. This request is evaluated against each of these criteria below.

- (1) As discussed previously, lack of containment isolation valve position indication alone does not preclude the valve from performing its required isolation function. All valves would be expected to close as required and thus provide containment isolation. Development of a planned alternate method for determining the post-accident isolation status of the associated penetration will ensure that the capability of control room operators to assess containment isolation/integrity under such conditions is maintained. Since the proposed change is consistent with the intent of Regulatory Guide 1.97 requirements and does not impact the operation of the associated isolation valves, this request does not result in a significant increase in the probability or the consequences of any accident previously evaluated.
- (2) This request does not result in any change to the plant design or operation as the scope of the potential impact of this request is limited only to the method for verifying the status of primary containment integrity. The proposed change does not itself involve any changes to the plant design. As a result, no new failure modes are introduced, and the request will not create the possibility of a new or different kind of accident from any accident previously evaluated.



- (3) The proposed request does not impact the reliability of the primary containment isolation valves and therefore, does not constitute a significant reduction in a margin of safety. The proposed change permits continued operation with the number of operable position indication channels less than required, provided an alternate method is available to verify the post-accident isolation status of the associated containment penetration(s). Since, this request does not involve an impact to valve operability and all required functions are still capable of being fulfilled, this request does not involve a significant reduction in a margin of safety.

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

TABLE 3.3.7.5-1

## ACCIDENT MONITORING INSTRUMENTATION

INSTRUMENT	REQUIRED NUMBER OF CHANNELS	MINIMUM CHANNELS OPERABLE	APPLICABLE OPERATIONAL CONDITIONS	ACTION
1. Reactor Vessel Pressure	2	1	1, 2, 3	80
2. Reactor Vessel Water Level	2	1	1, 2, 3	80
3. Suppression Pool Water Level	4	2	1, 2, 3	80
4. Suppression Pool Water Temperature	2/quadrant†	1/quadrant†	1, 2, 3	80
5. Drywell Pressure	2	1	1, 2, 3	80
6. Drywell Air Temperature	2	1	1, 2, 3	80
7. Drywell/Containment Hydrogen and Oxygen Concentration Analyzer and Monitor	2	1	1, 2, 3	83
8. Containment Pressure ##	2/division	1/division	1, 2, 3	80
9. Containment Temperature	2	1	1, 2, 3	80
10. Safety/Relief Valve Acoustic Monitor	1/valve***	1/valve***	1, 2, 3	80
11. Containment/Drywell High Range Gross Gamma Radiation Monitors	4**	2*	1, 2, 3	81
12. HVAC Stack High Range Radioactivity Monitor#	1	1	1, 2, 3	81
13. SGTS Exhaust High Range Radioactivity Monitor#	1	1	1, 2, 3	81
14. Primary Containment Isolation Valve Position Indication ††	2/valve###	1/valve###	1, 2, 3	82

## TABLE NOTATIONS

- \* One each for containment and drywell.
- \*\* Two each for containment and drywell.
- \*\*\* Thermocouples in the SRV discharge line can serve as backup to the acoustic tail pipe monitors indication should one channel of the position indication become inoperable.
- # High range noble gas monitors and iodine/particulate sampler.
- ## For Divisions I and II only.
- ### Not applicable if valve position indication is unavailable because the valve was deliberately deactivated, provided the valve is in the isolated position and administrative controls are in place to ensure that the control room operators can determine the valve's position, if needed. Valves closed in accordance with these conditions may be reopened on an intermittent basis under administrative controls.
- † These instruments monitor suppression pool water temperature when pool water level is below instruments of Specification 3.6.3.1.
- †† One channel consists of the open limit switch, and the other channel consists of the closed limit switch for each automatic isolation valve in Table 3.6.4-1 Part 1, "Automatic Isolation Valves."

THIS INFORMATION/CONTINUITY  
FOR IN

TABLE 3.3.7.5-1 (Continued)  
ACCIDENT MONITORING INSTRUMENTATION

ACTION

- ACTION 80 -
- a. With the number of OPERABLE accident monitoring instrumentation channels less than the Required Number of Channels shown in Table 3.3.7.5-1, restore the inoperable channel(s) to OPERABLE status within 7 days or be in at least HOT SHUTDOWN within the next 12 hours. The provisions of Specification 3.0.4 are not applicable.
  - b. With the number of OPERABLE accident monitoring instrumentation channels less than the Minimum Channels OPERABLE requirements of Table 3.3.7.5-1, restore the inoperable channel(s) to OPERABLE status within 48 hours or be in at least HOT SHUTDOWN within the next 12 hours.
- ACTION 81 -
- With the number of OPERABLE Channels less than required by the Minimum Channels OPERABLE requirement, either restore the inoperable Channel(s) to OPERABLE status within 72 hours, or:
- a. Initiate the preplanned alternate method of monitoring the appropriate parameter(s), and
  - b. Prepare and submit a Special Report to the Commission pursuant to Specification 6.9.2 within 14 days following the event outlining the action taken, the cause of the inoperability and the plans and schedule for restoring the system to OPERABLE status.
  - c. The provisions of Specification 3.0.4 are not applicable.
- ACTION 82 -
- a. With the number of OPERABLE accident monitoring instrumentation channels less than the Required Number of Channels shown in Table 3.3.7.5-1, verify the valve(s) position by use of alternate indication methods; restore the inoperable channel(s) to OPERABLE status within 30 days or be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.
  - b. With the number of OPERABLE accident monitoring instrumentation channels less than the Minimum Channels OPERABLE requirements of Table 3.3.7.5-1, verify the valve(s) position by use of alternate indication methods; restore the inoperable channel(s) to OPERABLE status within 7 days or be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.
  - c. The provisions of Specification 3.0.4 are not applicable.
- ACTION 83 -
- a. With the number of OPERABLE channels one less than the Required Number of Channels shown in Table 3.3.7.5-1, restore the inoperable channel to OPERABLE status within 30 days or be in at least HOT SHUTDOWN within the next 12 hours.
  - b. With the number of OPERABLE channels less than the Minimum Channels OPERABLE requirements of Table 3.3.7.5-1, restore at least one channel to OPERABLE status within 7 days or be in at least HOT SHUTDOWN within the next 12 hours.

- \* If the location(s) of failure is inaccessible during plant operation, operation may continue provided that a planned alternate method for determining the post-accident isolation status of the associated containment penetration(s) is implemented. The provisions of Specification 3.0.4 are applicable if this alternative is utilized.



Subject:

Request for Emergency Technical Specification Change  
Regarding Action Statement for Primary Containment  
Isolation Valve Position Indication

U-601841  
L47-91(05-15)LP  
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bcc J. S. Perry, V-275  
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Technical Validators

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2. \_\_\_\_\_

\* Associated Corrective Action Document N/A

Subject: Request for Emergency Technical Specification Change  
Regarding Action Statement for Primary Containment  
Isolation Valve Position Indication

U-601841  
147-91(05-15)LP  
8E.100

bcc J. S. Perry, V-275  
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J. A. Miller, V-928C  
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\* Associated Corrective Action Document N/A