

ILLINOIS POWER

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10CFR50.90

Docket No. 50-461

Nuclear Regulatory Commission
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Washington, D.C. 20555

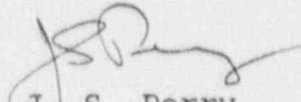
Subject: Clinton Power Station
Proposed Amendment of Facility
Operating License No. NPF-62

Dear Sir:

Pursuant to 10CFR50.90, Illinois Power Company (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 proposed changes to Technical Specification 3/4.3.4.1, "ATWS Recirculation Pump Trip System Instrumentation." For each of these proposed changes, a description, the associated justification (including a Basis for No Significant Hazards Consideration), and marked-up copies of pages from the current Technical Specifications are provided in Attachment 2. In addition, 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 changes do not involve a significant hazards consideration, or significantly increase the amounts or change the types of effluents that may be released offsite, nor do they 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. S. Perry
Vice President

DAS/alh

Attachments

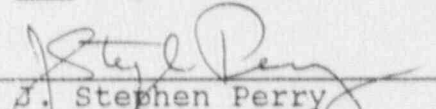
cc: Regional Administrator, Region III, USNRC
NRC Clinton Licensing Project Manager
NRC Resident Office
Illinois Department of Nuclear Safety

STATE OF ILLINOIS
COUNTY OF DEWITT

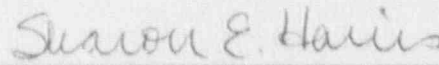
J. Stephen Perry, being first duly sworn, deposes and says: That he is Vice President of Illinois Power Company; that the application for amendment of Facility Operating License NPF-62 has been prepared under his supervision and direction; that he knows the contents thereof; and that to the best of his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

DATED: This 17 day of December 1990

Signed:


J. Stephen Perry

Subscribed and sworn to before me this 17 day of December 1990.


Notary Public



Attachment 2
to U-601766

Attachment 2

The following package comprises Attachment 2.

LS-89-021

Background

Clinton Power Station (CPS) Technical Specification 3/4.3.4.1, "ATWS Recirculation Pump Trip System Instrumentation," addresses the operability of the instrumentation provided to automatically initiate the Anticipated Transient Without Scram Recirculation Pump Trip (ATWS-RPT) system. As stated in the Bases for this Technical Specification, the ATWS-RPT system provides a means of limiting the consequences of an unlikely occurrence of a failure to scram during an anticipated transient. Trip of the recirculation pumps from 100 percent to zero speed is needed to limit the initial reactor vessel pressure rise and to reduce the steam blowdown to the suppression pool (by reducing reactor power) in the unlikely event that an anticipated transient without scram (ATWS) occurs. Additionally, the ATWS-RPT system is installed in order to comply with the requirements of 10CFR50.62.

The logic for the ATWS-RPT instrumentation is non-safety related and consists of four reactor vessel pressure channels and four reactor vessel water level channels arranged in two separate trip systems (two reactor pressure channels and two reactor water level channels in each trip system). A trip of both reactor pressure channels or both reactor water level channels in one trip system results in an automatic trip of both reactor recirculation pumps and automatic initiation of the Alternate Rod Insertion (ARI) system. Per design, the ATWS-RPT logic is also provided with a "test" switch at the trip system level to allow bypassing that trip system for maintenance and testing. Placing this switch in the "test" position causes both reactor pressure channels and both reactor water level channels in that trip system to become inoperable. However, with one trip system bypassed, automatic initiation of the ATWS-RPT and ARI systems is still possible from both reactor pressure channels or both reactor water level channels in the redundant trip system.

Technical Specification 3.3.4.1 requires both reactor pressure channels and both reactor water level channels in each trip system to be operable while in Operational Condition 1. Action "b" of Technical Specification 3.3.4.1 currently allows one channel in one trip system to be inoperable for up to 48 hours; otherwise, the plant must be in at least Startup (Operational Condition 2) within the next six hours. Additionally, footnote (a) to Technical Specification Table 3.3.4.1-1, "ATWS Recirculation Pump Trip System Instrumentation," allows one channel to be placed in an inoperable status for up to two hours for required surveillance provided the redundant trip system is operable and monitoring that parameter.

Because of the design of the ATWS-RPT instrumentation at CPS, it is impossible to bypass only one channel. As described above, use of one of the presently installed ATWS-RPT test switches results in the entire trip system (both reactor pressure channels and both reactor water level channels) being inoperable. Footnote (a) to Technical Specification Table 3.3.4.1-1 and the Action Statements of Technical Specification 3.3.4.1 do not currently address having more than one channel in one trip system inoperable. Therefore, the following proposed changes to Technical Specification 3.3.4.1 are being

provided to more closely reflect the capabilities of the CPS ATWS-RPT instrumentation design and to allow the use of the ATWS-RPT trip system test switches during Operational Condition 1.

Description of Proposed Changes

In accordance with 10CFR50.90, the following changes to CPS Technical Specification 3/4.3.4.1, "ATWS Recirculation Pump Trip System Instrumentation," are being proposed:

- 1) Action "b" is being revised to allow continued plant operation when the number of operable channels is any number less than required by the Minimum Operable Channels per Trip System requirement for one trip system. This proposed change will require the inoperable channel(s) to be placed in the tripped condition within 72 hours. When the inoperable channel(s) cannot be placed in the tripped condition within 72 hours, either because of an equipment problem or because this would cause actuation of the ATWS-RPT system or ARI system, the plant would be required to be in at least Startup (Operational Condition 2) within the next six hours.

This proposed change will preclude unnecessary plant shutdown when the logic has been placed in a conservative condition such that the inoperable channel(s) will not preclude actuation of that trip system from that parameter. The proposed time limit (72 hours) is consistent with the Standard Technical Specifications and the Technical Specifications of other BWR/6 plants when one trip system is not capable of providing the required actuations.

In addition, an exemption from the provisions of Technical Specification 3.0.4 has been added to the proposed Action "b". This exemption will allow plant startup with one or more channels inoperable in one trip system.

- 2) A new Action Statement, Action "c", is being added to allow continued plant operation when the number of operable channels is one less than required by the Minimum Operable Channels per Trip System requirement for both trip systems. The proposed Action "c" will require one inoperable channel to be placed in the tripped condition within one hour. Consistent with proposed Action "b" above, the second inoperable channel would be required to be placed in the tripped condition within 72 hours. If these requirements cannot be met, either because of an equipment problem or because this would cause actuation of the ATWS-RPT system or ARI system, the plant would be required to be in at least Startup (Operational Condition 2) within the next six hours.

This proposed change will also preclude unnecessary plant shutdown when the ATWS-RPT logic has been placed in a conservative condition such that the inoperable channels will not preclude actuation of either trip system from either parameter. The proposed time limit of one hour is consistent

with the Standard Technical Specifications when one channel is inoperable in both trip systems although the Standard Technical Specifications require both inoperable channels to be placed in the tripped condition within one hour.

Additionally, an exemption from the provisions of the Technical Specification 3.0.4 has been added to the proposed Action "c". This exemption will allow plant startup with one channel inoperable in both trip systems.

- 3) A new Action Statement, Action "d", is being added to address the condition of both trip systems being inoperable for reasons other than addressed by the proposed Action "c". The proposed Action "d" will require at least one trip system to be restored to operable status within one hour or the plant must be in at least Startup (Operational Condition 2) within the next six hours. When one trip system has been restored to operable status, continued plant operation would be governed by proposed Action "b". This proposed change will provide a very limited period of time to restore the capability of the ATWS-RPT instrumentation to effect an automatic trip when required without resulting in unnecessary entry into Technical Specification 3.0.3. This proposed change is identical to the requirements provided in the Standard Technical Specifications and the Technical Specifications of other BWR/6 plants when both trip systems of the ATWS-RPT instrumentation are inoperable.
- 4) Footnote (a) of Technical Specification Table 3.3.4.1-1 is being revised to allow one trip system to be placed in an inoperable status for up to two hours for required surveillance when the redundant trip system is operable. As described in the Background section of this request, this proposed change is necessary to allow the use of the presently installed ATWS-RPT trip system test switches during Operational Condition 1.

Justification for Proposed Changes

The current Action Statements of CPS Technical Specification 3.3.4.1 are overly restrictive with respect to the CPS design. As described in the Bases for this Technical Specification and CPS Updated Safety Analysis Report (USAR) Section 7.7.1.25, the ATWS-RPT is a non-safety related system installed to mitigate the potential consequences of a postulated ATWS event. In compliance with 10CFR50.62, the ATWS-RPT system functions independently of the nuclear safety-related End-of-Cycle Recirculation Pump Trip (EOC-RPT) system by providing an alternate means of tripping the recirculation pump motors and the low frequency motor/generator sets during a postulated ATWS event. As stated in USAR Section 15.8.1, the probability of an ATWS event is significantly less than the probability of a design basis event. In the extremely remote case that such an event should occur, the ATWS-RPT system will quickly reduce reactor power. Operator action can also be taken to insert control rods or activate the standby liquid control system and achieve subcriticality independent of control rod insertion.

As previously discussed, the ATWS-RPT logic is arranged in two separate trip systems. Each trip system consists of two reactor vessel water level channels and two reactor vessel pressure channels. A trip of both reactor water level channels or both reactor pressure channels in one trip system results in actuation of that trip system. Actuation of either trip system is sufficient for complete actuation of the ATWS-RPT and ARI systems.

The current CPS Technical Specifications only address inoperability of one channel in one trip system. The current CPS Technical Specifications allow one channel to be inoperable for 48 hours or the plant must be in at least Startup (Operational Condition 2) within the next six hours. In this configuration, automatic initiation of the ATWS-RPT and ARI systems can still be achieved from the remaining operable trip parameter in the affected trip system or from either operable trip parameter in the redundant trip system.

Proposed Action "b"

The proposed Action "b" would allow continued plant operation with one or more inoperable channels in one trip system. In this configuration, the redundant trip system would still be fully operable. As a result, the ATWS-RPT instrumentation is still capable of performing its safety functions in response to either trip parameter (low reactor water level or high reactor pressure) in the redundant trip system. However, single failure considerations require that continued plant operation be limited.

The proposed Action "b" would limit continued plant operation to 72 hours, but instead of requiring the plant to be in at least Startup within the next six hours at the end of this time period, the proposed Action "b" would allow plant operation to continue if the inoperable channel(s) can be placed in the tripped condition without causing actuation of the ATWS-RPT system or ARI system. Alternatively, if the inoperable channel(s) cannot be placed in the tripped condition without causing actuation of the ATWS-RPT system or ARI system, the inoperable channel(s) must be restored to operable status within 72 hours or the plant must be in at least Startup within the next six hours.

Continued plant operation for up to 72 hours with one trip system potentially incapable of actuating from one or both trip parameters is justified based upon the capability of the remaining operable trip system to provide the required actuations from either trip parameter and the low probability of an event occurring that requires operation of this system, coincident with a single failure, during this relatively short time period. Additionally, this allowable out-of-service time (72 hours) is consistent with the time limit provided in the Standard Technical Specifications and the Technical Specifications of other BWR/6 plants when one trip system is incapable of providing the required actuations. After the inoperable channel(s) has been placed in the tripped condition, the ability of the ATWS-RPT instrumentation to effect an automatic trip from either

trip parameter coincident with single failure has been restored, and therefore unlimited plant operation is justified.

Additionally, an exemption from the provisions of Technical Specification 3.0.4 has been added to the proposed Action "b". This provision will allow plant startup with one or more channels inoperable in one trip system. As stated above, the redundant trip system would still be fully operable in this configuration and the inoperable channel(s) would be required to be placed in the tripped condition within 72 hours. With this proposed change, the Technical Specifications would still provide adequate assurance that the ATWS-RPT instrumentation will perform its required function(s) in the unlikely event of an ATWS event. Moreover, per proposed Action "b", system redundancy must be restored within 72 hours. Therefore, it is overly restrictive to prevent entry into Operational Condition 1 with an inoperable channel(s) in one trip system.

Proposed Action "c"

The proposed Action "c" would extend the ability to continue plant operation with one channel inoperable in both trip systems. This allowance is provided in the Standard Technical Specifications and other BWR/6 plants' Technical Specifications. In this case, one inoperable channel would be required to be placed in the tripped condition within one hour. This action would restore the ability of the ATWS-RPT instrumentation to effect an automatic trip from either trip parameter. However, single failure considerations require that continued plant operation be limited. Consistent with proposed Action "b" above, the second inoperable channel would be required to be placed in the tripped condition within 72 hours. As discussed above, this subsequent action will restore the ability of the ATWS-RPT instrumentation to perform its safety functions coincident with a single failure. If these requirements cannot be met, the plant would be required to be in at least Startup within the next six hours.

The proposed allowance for one inoperable channel in both trip systems to exist for one hour is justified based upon the extremely low probability of an event occurring during this very short time period. (As previously stated, the probability of an ATWS event occurring is significantly less than that of a design basis accident.) Therefore, continued plant operation in this condition for one hour is justified. Additionally, the ability of the ATWS-RPT instrumentation to actuate when required, coincident with a single failure, is restored (within 72 hours) after both inoperable channels have been placed in the tripped condition. Continued, unlimited plant operation in this condition is therefore justified.

Additionally, an exemption from the provisions of Technical Specification 3.0.4 is included in the proposed Action "c". This provision will allow plant startup with one channel inoperable in both trip systems. As stated above, one inoperable channel would be required to be placed in the tripped condition within one hour and the second inoperable channel would be required to be placed in the tripped condition within 72 hours. These actions provide adequate assurance that the ATWS-RPT instrumentation will be available when

required since the probability of an event occurring that requires actuation of this system is extremely small during the very short period of time the ATWS-RPT instrumentation is potentially not capable of providing the required actuations from both trip parameters. After one inoperable channel has been placed in the tripped condition (within one hour), the associated trip system has been restored to a configuration that will provide the required actuations from either trip parameter. Additionally, the second inoperable channel would be required to be placed in the tripped condition within 72 hours. This will restore the ability of both trip systems to effect an automatic actuation from either trip parameter. Therefore, it is overly restrictive to prevent entry into Operational Condition 1 with one inoperable channel in both trip systems, and the proposed exemption from the provisions of Technical Specification 3.0.4 is justified.

Proposed Action "d"

The proposed Action "d" addresses the case in which both trip systems are inoperable for reasons other than addressed by proposed Action "c". In this case, the proposed Action "d" requires at least one trip system to be restored to operable status within one hour. With one trip system restored to operable status, continued plant operation would be governed by proposed Action "b". If one trip system is not restored to operable status within one hour, the plant must be in at least Startup within the next six hours. Continued plant operation for one hour with both ATWS-RPT trip systems inoperable is consistent with the requirements of the Standard Technical Specifications and the Technical Specifications of other BWR/6 plants. The proposed Action "d" is justified based on the extremely limited period of time that proposed Action "d" will allow continued plant operation with both ATWS-RPT trip systems inoperable and the extremely low probability of an event occurring that requires actuation of this system during this very short time period.

Footnote (a) to Table 3.3.4.1-1

The proposed change to footnote (a) of Technical Specification Table 3.3.4.1-1 is provided to allow the use of the ATWS-RPT trip system test switches during Operational Condition 1. As previously discussed, placing one ATWS-RPT instrumentation test switch in the test position causes the associated trip system (two reactor pressure channels and two reactor water level channels) to be bypassed. Therefore, when this switch is placed in the test position, four channels of the ATWS-RPT instrumentation are inoperable. As it is currently worded, footnote (a) only allows one channel to be bypassed for surveillance testing. The current footnote is therefore ineffective since, because of the circuit design, there is no physical way to bypass only one channel in the ATWS-RPT logic.

This proposed change will allow use of the ATWS-RPT trip system test switches for a limited period of time during Operational Condition 1 by allowing one complete trip system to be bypassed for up to two hours for required surveillance provided the redundant trip system is operable. Because the redundant trip system would still be capable

of actuating the ATWS-RPT and ARI systems from either trip parameter (i.e., high reactor pressure or low reactor water level) during the short period of time allowed by this proposed note, this proposed change is justified.

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. The proposed changes are evaluated against each of these criteria below.

- 1) Since these proposed changes do not involve a change to the plant design or operating modes, these proposed changes cannot increase the probability of any accident previously evaluated. The ATWS-RPT instrumentation is provided to mitigate the consequences of a postulated ATWS event, and its failure alone cannot create an accident.

The proposed change to allow any number of channels in one trip system to be inoperable for up to 72 hours is justified based upon the ability of the redundant trip system to provide the required actuations from either trip parameter (i.e., low reactor water level or high reactor pressure) and the low probability of an event occurring that requires actuation of this instrumentation, coincident with a single failure, during this relatively short time period. As presented in USAR Section 15.8.1, the probability of an ATWS event is significantly less than the probability of a design basis event. Additionally, the allowance to have one ATWS-RPT trip system potentially incapable of providing the required actuations for up to 72 hours is consistent with the Standard Technical Specifications and the Technical Specifications of other BWR/6 plants.

The proposed changes to allow continued plant operation for one hour with both trip systems inoperable are justified based upon the extremely low probability of an event occurring that requires actuation of this instrumentation during this very short time period. Notwithstanding, restoration would be required (within one hour), such that the ATWS-RPT logic would be restored to a condition in which it is capable of providing automatic actuation from each of its trip parameters (i.e., low reactor water level and high reactor pressure). Moreover, the proposed Actions would ensure, due to single failure considerations, that the redundancy provided by two trip systems be restored within a limited time period. The proposed changes still require that the capability of both trip systems be restored within 72 hours. Otherwise, the plant is required

to be in at least Startup (Operational Condition 2) within the next six hours.

The proposed exemptions from the provisions of Technical Specification 3.0.4 to allow entry into Operational Condition 1 with an inoperable channel(s) are justified since placing the inoperable channel(s) in the tripped condition places the ATWS-RPT logic in a conservative condition such that the inoperable channel(s) will not preclude actuation of the trip system(s) from the required parameters. Additionally, as discussed above, the allowable out-of-service times provided in the proposed Actions provide adequate assurance that the ATWS-RPT instrumentation will be available when required.

The proposed change to footnote (a) merely allows the use of the presently installed ATWS-RPT trip system test switches to perform required surveillances while in Operational Condition 1. This proposed change still requires that the redundant trip system be operable to provide the required actuations in the unlikely occurrence of an ATWS event during this short time period. Because the use of the test switch is limited to two hours, this proposed change is justified based upon the very low probability of an event occurring that requires actuation of this system, coincident with a single failure, during this very short time period.

Based upon the above, these proposed changes do not significantly increase the probability or the consequences of any accident previously evaluated.

- 2) These proposed changes do not result in any change to the plant design or operation which could introduce a new failure mode. Failure of the ATWS-RPT instrumentation alone cannot create an accident. Therefore, these proposed changes cannot create the possibility of a new or different kind of accident from any accident previously evaluated.
- 3) These proposed changes do not involve a change to the plant design, operation, or setpoints of the ATWS-RPT instrumentation. As described in item 1 above, under the proposed changes, the Technical Specifications would continue to provide adequate assurance that the ATWS-RPT instrumentation is available to perform its intended safety functions when required. Therefore, these proposed changes do not involve a significant reduction in the margin of safety.

Based upon the foregoing, IP concludes that these proposed changes do not involve a significant hazards consideration.