Commonwealth Edison Company
Dresden Generating Station
6500 North Dresden Road
Morris, IL 60450
Tel 815-942-2920

ComEd

May 20, 1999

JMHLTR: #99-0062

U. S. Nuclear Regulatory Commission
ATTN.: Document Control Desk
Washington, DC 20555

Dresden Nuclear Power Station, Units 2 and 3
Facility Operating Licenses Nos. DPR-19 and DPR-25
NRC Docket Nos. 50-237 and 50-249

Subject: Application for Amendment to Appendix A, Technical Specifications (TS), 3/4.8 "Containment Cooling Service Water" and Technical Specification 3.5.C. "Suppression Chamber"

References: A) Letter from J.P.Dimmette (ComEd) to USNRC, "Request for License Amendment Change to Various Acceptance Values to Reconcile with Design Values "dated May 18, 1998

Pursuant to 10 CFR 50.90, Commonwealth Edison (ComEd) Company proposes to amend Appendix A, Dresden Nuclear Power Station (Dresden) Technical Specification Section 3.8.A of Facility Operating Licenses DPR-19 and DPR-25. The purpose of this amendment request is to identify specific Containment Cooling Service Water equipment required to support operation of the Control Room Emergency Ventilation System (CREVS) as required by Technical Specification Section. 3/4.8.D.

Additionally, ComEd proposes to revise the Technical Specifications 3.5.C.2 and Surveillance Requirement 4.5.C.2 to reflect the required minimum suppression chamber water level to ensure proper operation of the low pressure Emergency Core Cooling System (ECCS) pumps. The proposed Technical Specification Amendment is subdivided as follows:

1. Attachment A gives a description and safety analysis of the proposed changes.

2. Attachment B includes the proposed changes to the Technical Specification pages, including marked-up versions of the current pages.

3. Attachment C describes ComEd's evaluation performed in accordance with 10 CFR 50.92(c), which confirms that no significant hazards consideration is involved. In addition, ComEd's Environmental Assessment Applicability Review is included.

A001

4. Attachment D provides the Environmental Assessment.

This proposed Technical Specification amendment has been reviewed and approved by ComEd On-Site and Off-Site Review in accordance with ComEd procedures.

ComEd requests NRC approval of this request by October 1, 1999

ComEd is notifying the State of Illinois of this application for amendment by transmitting a copy of this letter and its attachments to the designated state official.

Please direct any questions you may have concerning this submittal to Dale Ambler, Regulatory Assurance Manager (815) 942-2920 extension 3800.

Respectfully,

J. M. Heffley
Site Vice President
Dresden Nuclear Power Station

Attachments:

A. Description and Safety Analysis of the Proposed Changes
B. Marked-Up Technical Specification Pages
C. Evaluation of Significant Hazards Considerations and Environmental Assessment Applicability Review
D. Environmental Assessment

cc: Regional Administrator – NRC Region III
Senior Resident Inspector – Dresden Nuclear Power Station

STATE OF ILLINOIS

IN THE MATTER OF

COMMONWEALTH EDISON (COMED) COMPANY

DRESDEN STATION – UNITS 2 & 3

Docket Nos. 50-237
50-249

AFFIDAVIT

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

J.M. Heffley
Site Vice President
Dresden Station

OFFICIAL SEAL
LAURA KAMINSKAS
NOTARY PUBLIC, STATE OF ILLINOIS
MY COMMISSION EXPIRES 6-1-2002

Subscribed and sworn to before me, a Notary Public in and for the State above named, this 20 day of May, 1999.

Laura Kaminskas
Notary Public

ATTACHMENT A

DESCRIPTION AND SAFETY ANALYSIS OF THE PROPOSED CHANGES

Description of the Current Requirement

Dresden Nuclear Power Station Technical Specification 3.8.A specifies the applicability, limiting conditions for operation and action statements for the Containment Cooling Service Water System (CCSW). The specific requirement states that:

> At least the following independent containment cooling service water (CCSW) subsystems, with each comprised of:
>
> 1. Two OPERABLE CCSW pumps, and
>
> 2. an OPERABLE flow path capable of taking suction from the ultimate heat sink and transferring the water:
>
>   a. Through one LPCI heat exchanger, and separately,
>
>   b. To the associated safety related equipment,
>
> shall be OPERABLE.
>
> 1. In OPERATIONAL MODE(s) 1, 2 and 3, two subsystems.
>
> 2. In OPERATIONAL MODE *, the subsystems (s) associated with subsystems loops and components required OPERABLE by Specification 3.8.D.

Bases for the Current Requirement

The CCSW systems are designed to remove heat from the containment, reduce containment pressure and restore suppression pool temperature following a postulated Loss-of-Coolant Accident (LOCA). This is accomplished by having two separate, two pump, flow (subsystems) loops. Each pair of CCSW pumps (two per loop) draws water from the cribhouse suction bays (ultimate heat sink) via separate supply piping. Two CCSW pumps discharge into a common header which routes the cooling water to that loop's associated heat exchanger. At the heat exchanger, heat is transferred from the low pressure coolant injection (LPCI) subsystem to the CCSW system, and subsequently, to the ultimate heat sink.

CCSW also provides cooling water to the Refrigeration Control Unit (RCU) of the Main Control Room Emergency Ventilation System (CREVS). Technical Specification 3.8.D provides the limiting conditions for operation (LCOs), applicability and action statements for the CREVS. The CREVS assures that, during the accident conditions, the main control room remains habitable for the operators as well as assures the required heat is removed from the control room atmosphere in accordance with Surveillance Requirement 4.8.D.1. CREVS is a single train filtration system that can be powered

from the Unit 2 Emergency Diesel Generator. Normal cooling water to the CREVS RCU is provided by plant service water from either Unit 2 or Unit 3. Plant service water is non-safety related and would not normally be powered by the Emergency Diesel Generator post-accident. Unit 2 CCSW provides a 121 gpm water supply to the CREVS RCU to assure proper cooling of the RCU compressor. CCSW pumps have a design capacity of 3500 gpm per pump. Therefore, only a small fraction of flow from one CCSW pump is required to assure proper performance of the RCU.

Description of the Proposed Change

In accordance with 10CFR50.90, ComEd proposes to clarify the APPLICABILITY of Specification 3.8.A to note that only one CCSW pump is required to support RCU operation for the CREVS in OPERATIONAL MODES 1, 2, 3 and *. This change is accomplished by adding new footnote (a) to APPLICABILITY statement which states: "*Any one of four Unit 2 CCSW pumps is required to support CREVS RCU operation.*" Another change will be the removal of OPERATIONAL MODE * as a separate line item and inclusion of OPERATIONAL MODE * with modes 1, 2, and 3. The second reference to "two subsystems" in the APPLICABILITY statement has been deleted thereby requiring replacement of "At least the following" with the word "Two" in the opening sentence of the LCO. Therefore, the revised specification is proposed to read:

> Two[(a)] independent containment cooling service water (CCSW) subsystems, with each subsystem comprised of:
>
> 1. Two OPERABLE CCSW pumps, and
>
> 2. An OPERABLE flow path capable of taking suction from the ultimate heat sink and transferring the water:
>
> a. Through one LPCI heat exchanger, and separately,
>
> b. To the associated safety related equipment,
>
> shall be OPERABLE.
>
> In OPERATIONAL MODE(s) 1, 2, 3, and *.

Footnote (a) will be placed below the * footnote and will read

> a Any one of four Unit 2 CCSW pumps is required to support CREVS RCU operation.

ATTACHMENT A

DESCRIPTION AND SAFETY ANALYSIS OF THE PROPOSED CHANGES

Revision of the TS 3.8.A Action 2 is required to reflect that a subsystem as described in the APPLICABILITY is overly restrictive and that, when in OPERATIONAL MODE *, one CCSW pump must be operable to support the CREVS RCU.

Current TS 3.8.A Action 2 states:

> "In OPERATIONAL MODE * with the CCSW subsystem which is associated with the safety related equipment required OPERABLE by Specification 3.8.D inoperable, declare the associated safety related equipment inoperable and take the ACTION required by Specification 3.8.D."

ComEd proposes to replace the "CCSW subsystem" in ACTION 2 with "CCSW pump" to be consistent with proposed footnote (a). The revised action will read:

> "In OPERATIONAL MODE * with the CCSW pump which is associated with the safety related equipment required OPERABLE by Specification 3.8.D inoperable, declare the associated safety related equipment inoperable and take the ACTION required by Specification 3.8.D."

Bases for the proposed change

Irrespective of OPERATIONAL MODE, the CREVS RCU compressor requires 121 gpm from a cooling medium, either plant service water or Unit 2 CCSW. The capacity of each CCSW pump is 3500 gpm. Therefore, only one CCSW pump is required operable to support CREVS operation. If plant service water is unavailable, one CCSW pump can supply the required cooling water flow to the RCU. CCSW is a load which is expected to be connected to the Emergency Diesel Generator post-accident. Flow from CCSW to the CREVS RCU does not pass through the CCSW heat exchanger. Therefore, requiring an OPERABLE "subsystem" as defined in Specification 3.8.A is overly restrictive and not consistent with design requirements. Unit 3 CCSW does not provide any water to the CREVS RCU, therefore the revised footnote reflects that design.

Need for the proposed change

Current Specification 3.8.A does not clearly state that only one CCSW pump is required to support CREVS operation. The LCO 3.8.A requires two CCSW pumps and an operable flow path capable of taking suction from the ultimate heat sink and transferring water through one heat exchanger or separately to the associated safety related equipment. The CREVS RCU compressor system is one system that uses CCSW water as the cooling medium. Additional provisions of the LCO require 1) Two subsystems operable in OPERATIONAL MODE(s) 1,2 and 3 and, in OPERATIONAL MODE *, the subsystems associated with the subsystem/loops and components required OPERABLE by Specification 3.8.D (CREVS).

ATTACHMENT A

DESCRIPTION AND SAFETY ANALYSIS OF THE PROPOSED CHANGES

As previously stated, the CREVS is a single train system equipped with one RCU. The RCU needs 121 gpm to cool its compressor. Therefore, one CCSW pump is required to fulfill this function irrespective of the OPERATIONAL MODE. The current specification requires 2 subsystems operable in OPERATIONAL MODE 1, 2 and 3 for containment cooling purposes and should not impose overly restrictive requirements for CCSW support of the CREVS system.

The second part of the APPLICABILITY statement of current LCO 3.8.A provides some clarity that there are different requirements of the CCSW system to support the CREVS RCU versus the containment cooling function. However, the requirements to have one CCSW pump operable for CREVS is not mode dependent as suggested by the current technical specification. The proposed footnote (a) states the requirements clearly.

Additionally, Technical Specification 3.8.A Action 2 has been appropriately revised to reflect that a subsystem as described in the current APPLICABILITY is not required in OPERATIONAL MODE *. The containment cooling function is not required when the reactor is only in OPERATIONAL MODE *. Therefore, one CCSW pump is required operable to support CREVS and Action 2 has been modified to reflect that requirement.

Safety Analysis of the Proposed Change

The CREVS system provides a radiologically controlled environment from which the plant can be operated after a design basis accident. The RCU maintains the temperature in the control room at an acceptable level for the control room operators. Water supplied to the RCU compressor for cooling via service water may not be available post-accident, therefore, Unit 2 CCSW provides a water supply that is available post-accident since CCSW pumps are expected loads on the Emergency Diesel Generators post-accident. The proposed change has a minimal effect on safety since, in OPERATIONAL MODE(s) 1, 2 and 3, two subsystems will continue to be required to support the containment cooling function of CCSW. Therefore, at least more than one CCSW pump will continue to be operable to provide support of the CREVS. In OPERATONAL MODE *, the proposed change provides clarity that only one CCSW pump is required operable to support the CREVS. The proposed changes are consistent with the current design and remove the appearance of overly restrictive provisions.

ATTACHMENT A

DESCRIPTION AND SAFETY ANALYSIS OF THE PROPOSED CHANGES

Suppression Chamber level (from ≥ 8 feet to ≥ 10 feet, 4 inches.)

Description of the Current Requirement

Pursuant to the provisions of the 10CFR50.90, ComEd proposes to revise TS Sections 3.5.C.2 and 4.5.C.2, "Suppression Chamber." This amendment proposes to raise the allowable level in the suppression chamber while operating in OPERATIONAL MODEs 4 or 5 from ≥8 feet to ≥10 feet, 4 inches (10' 4").

Current TS Section 3.5.C.2 requires the suppression chamber to be OPERABLE in OPERATIONAL MODE(s) 4 and 5 with a contained volume equivalent to a water level of ≥ 8 feet above the bottom of the suppression chamber. An exception is provided for OPERATIONAL MODE 5, allowing removal of all water from the suppression pool when the reactor vessel head is removed, the cavity is flooded or being flooded from the suppression pool, the spent fuel pool gates are removed when the cavity is flooded, and the water level is maintained within the limits of Specification 3.10.G and 3.10.H (reactor vessel and spent fuel pool water level requirements during refuel operations).

The current water level requirement in OPERATIONAL MODE(s) 4 and 5 is based on providing adequate NPSH for a single ECCS pump start. However, under certain scenarios, there could be an autostart of as many as 6 low-pressure ECCS pumps operating at unthrottled flows. Thus, the current technical specification allowable level is non-conservative, and may not provide the required ECCS NPSH during an event. Therefore, ComEd proposes to raise the suppression pool level requirements from ≥8 feet to ≥ 10 feet, 4 inches.

Bases for the Current Requirement

The current requirement for suppression chamber level while in OPERATIONAL MODEs 4 and 5 is based on ensuring that a sufficient supply of water is available to the Core Spray and Low Pressure Coolant Injection (LPCI) systems in the event of a Loss of Coolant Accident (LOCA). Since pressure suppression is not required below are reactor moderator temperature of 212°F, the minimum suppression pool water volume is based on net positive suction head (NPSH), recirculation volume and vortex prevention. The calculation, which supports this requirement, assumed one low pressure ECCS pump operating at design flow.

Description of the Proposed Change

This change will amend TS Sections 3.5.C.2 and 4.5.C.2 to raise the allowable level in the suppression chamber while in OPERATIONAL MODEs 4 or 5 from ≥8 feet to ≥ 10 feet, 4 inches. By raising the minimum water level to 10 feet, 4 inches, air entrainment

due to vortexing will be prevented should all six low-pressure ECCS pumps auto-start. The low-pressure ECCS pumps are expected to cavitate until the operators act to return the unthottled flow to design flow for each pump. Once at design flow, NPSH is maintained with a suppression pool water level at or above 10 feet, 4 inches.

Safety Analysis of the Proposed Change

The current requirement for suppression pool level during OPERATIONAL MODEs 4 and 5 is ≥8 feet. This requirement assumes one low pressure ECCS pump running at design flow. The potential exists for an auto start signal in OPERATIONAL MODEs 4 and 5 starting as many as 6 low pressure ECCS pumps operating at unthrottled flows, even though one pump would be sufficient to ensure core coverage. The current allowable level is non-conservative, and may not provide the required NPSH or avoid air entrainment into the ECCS pumps during auto-start of 6 ECCS pumps. Initiation of six low pressure ECCS pumps with zero reactor pressure will result in pump cavitation-until the pumps are either shutdown or throttled to design flows. Existing procedures require pump shutdown or throttling of pump flow on indication of cavitation. Dresden ECCS pumps have been tested for short-term cavitation without causing damage which would prevent long term operation. The proposed technical specification change restores margin to ensure the ECCS pumps are protected and are available to perform their design basis function.

Impact on Previous Submittals

ComEd has reviewed the proposed Operating License Amendment request regarding impact on any previous submittals, and has determined that there is no impact on any outstanding previous submittals.

Schedular Requirements

Approval of this TS change is requested by October 1, 1999. These issues either clarify existing requirements or correct TS limits that are non-conservative with respect to the design basis of the plant. Timely approval of this TS change will ensure that the TS reflect the current station design requirements and allows ComEd to close an open operability determination. A 60-day implementation period will provide sufficient time to reflect the changes to the TS in plant procedures, processes and training.