

Commonwealth Edison Company  
1400 Opus Place  
Downers Grove, IL 60515-5701



September 10, 1999

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

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

LaSalle County Station, Units 1 and 2  
Facility Operating License Nos. NPF-11 and NPF-18  
NRC Docket Nos. 50-373 and 50-374

Subject: Response to Requests for Additional Information about Chemistry  
Technical Specification Amendment Requests

References: (A) Commonwealth Edison (ComEd) Company letter, "Application  
for Amendment to Appendix A, Technical Specifications,  
Relocation of Technical Specification 3/4.6.1, "Primary System  
Boundary - Chemistry," dated May 3, 1999

(B) ComEd letter, "Application for Amendment to Appendix A,  
Technical Specifications, Relocation of Technical Specification  
3/4.4.4, "Chemistry," dated May 19, 1999

(C) NRC letter, "Dresden, Units 2 and 3 - Request for Additional  
Information about Chemistry Technical Specification  
Amendment Request," dated September 9, 1999

(D) NRC letter, "LaSalle Units 1 and 2 - Request for Additional  
Information," dated September 10, 1999

In the Reference A letter, pursuant to 10 CFR 50.90, we proposed to amend  
Appendix A, Technical Specifications, of Facility Operating Licenses DPR-19 and  
DPR-25 for Dresden Nuclear Power Station, Units 2 and 3. In the Reference B  
letter, pursuant to 10 CFR 50.90, we proposed to amend Appendix A, Technical  
Specifications, of Facility Operating Licenses NPF-11 and NPF-18 for LaSalle  
County Station, Units 1 and 2. The proposed amendments would relocate the  
Technical Specifications regarding reactor coolant chemistry to the

11  
11  
App 1

9909140038 990910  
PDR ADOCK 05000237  
P PDR

September 10, 1999  
U.S. Nuclear Regulatory Commission  
Page 2

Updated Final Safety Analysis Report for each station and, in addition, to the Administrative Technical Requirements for LaSalle County Station. In a telephone conference call with representatives of the NRC and ComEd on September 9, 1999, and subsequently documented in the Reference C letter, the NRC requested additional information concerning the proposed amendment for Dresden Nuclear Power Station, Units 2 and 3 (Dresden). In the Reference D letter, the NRC requested the same additional information concerning the proposed amendment for LaSalle County Station, Units 1 and 2 (LaSalle). The attachment to this letter provides our response to the requests for additional information.

Should you have any questions concerning this letter, please contact Mr. D. F. Ambler for Dresden at (815) 942-2920, extension 3800, or Mr. F. A. Spangenberg for LaSalle at (815) 357-6761, extension 2383.

Respectfully,

*K. A. Ringer for*

R. M. Krich  
Vice President - Regulatory Services

Attachment: Response to Requests for Additional Information

cc: Regional Administrator - NRC Region III  
NRC Senior Resident Inspector - Dresden Nuclear Power Station  
NRC Senior Resident Inspector - LaSalle County Station

September 10, 1999  
U.S. Nuclear Regulatory Commission  
Page 3

bcc: Project Manager – NRR – Dresden Nuclear Power Station  
Project Manager – NRR – LaSalle County Station  
Station Manager – Dresden Nuclear Power Station  
Station Manager – LaSalle County Station  
Regulatory Assurance Manager – Dresden Nuclear Power Station  
Regulatory Assurance Manager – LaSalle County Station  
Operations Manager – Dresden Nuclear Power Station  
Operations Manager – LaSalle County Station  
Training Manager – Dresden Nuclear Power Station  
Training Manager – LaSalle County Station  
Vice President – Regulatory Services  
Director, Licensing and Compliance – Dresden Nuclear Power Station  
Director, Licensing and Compliance – LaSalle County Station  
Dresden Regulatory Assurance – Subject File (Technical Specifications)  
LaSalle County Station Central File  
Office of Nuclear Facility Safety – IDNS  
Senior Reactor Analyst – IDNS  
Manager of Energy Practice – Winston and Strawn  
ComEd Document Control Desk Licensing (Hard Copy)  
ComEd Document Control Desk Licensing (Electronic Copy)

**ATTACHMENT****RESPONSE TO REQUESTS FOR ADDITIONAL INFORMATION**

**Background and Basis for RAI:** In the application of noble metal chemical addition (NMCA), the reactor coolant water chemistry, including conductivity, is expected to change and has the potential to exceed current Technical Specification (TS) limits. Extensive intergranular stress-corrosion cracking (IGSCC) has been found in many boiling water reactors (BWRs), including Dresden. The extent of IGSCC in BWRs depends greatly on the water chemistry of the reactor coolant. To ensure the structural integrity of the components degraded by IGSCC, certain limiting water chemistry conditions such as conductivity and chloride and sulfate content are required to be met in order to support the use of the assumed crack growth rates in the plant specific flaw evaluations. The proposed TS amendment would relocate reactor coolant water chemistry TS requirements to licensee controlled documents. Since these TS have been part of the basis used to justify operation with IGSCC, we have several questions about the chemistry controls that will be in place after the chemistry TS are relocated.

**Question 1:**

Describe in detail what programs will be in place to monitor and control water chemistry during the NMCA process. Include a description of the monitoring and controls that will be in place during the NMCA process for ionic species such as chloride, sulfate, and others that would accelerate IGSCC.

**RESPONSE:**

A combination of the noble metal compounds, sodium hexahydroxyplatinate [ $\text{Na}_3\text{Pt}(\text{OH})_6$ ] and sodium hexanitritorhodium [ $\text{Na}_2\text{Rh}(\text{NO}_2)_6$ ], will be used for the NobleChem™ injection. The sodium, nitrite and hydroxyl ions from these noble metal compounds will increase reactor water conductivity. In addition, zinc is expected to be released from the oxidized surfaces within the reactor. Reactor water conductivity will be monitored to ensure the conductivity limit of 20  $\mu\text{S}/\text{cm}$  is not exceeded. Reactor water pH will also be measured to ensure the pH is maintained in the range of 4.3 to 9.9. Ion chromatography, either in-line or from grab samples, will be used to measure  $\text{Na}^+$ ,  $\text{Zn}^{+2}$ ,  $[\text{SO}_4]^{-2}$ ,  $\text{NO}_2^-$ ,  $\text{NO}_3^-$ , and  $\text{Cl}^-$  ion concentrations. It is expected that these ionic species will remain within plant chemistry limits, as was the case in the NobleChem™ application at Quad Cities Nuclear Power Station. A negligible increase in crack growth rates may occur during the NobleChem™ injection process. Reactor Water Cleanup System demineralizers will be in operation during and after NobleChem™ injection to control the cations and anions associated with the process.

**ATTACHMENT****RESPONSE TO REQUESTS FOR ADDITIONAL INFORMATION****Question 2:**

Describe in detail what programs will be in place to monitor and control water chemistry during normal operations. Include a description of the monitoring and controls to ensure the chemistry environment is consistent with that used to generate the data for crack growth rates.

**RESPONSE:**

In addition to hydrogen addition, zinc addition, and noble metals injection, we control reactor impurity levels at Dresden and LaSalle in an effort to minimize IGSCC. We monitor and control reactor chemistry at Dresden and LaSalle via approved site chemistry procedures. Dresden procedure DCP 2118-02, "Reactor Water," and LaSalle procedure LCP-110-1, "Chemical Analysis and Corrective Action Schedule," contain goals and limits associated with reactor chemistry. These limits are at or below the "action levels" contained in the most recent (1996) EPRI BWR Water Chemistry Guidelines.

Upon deletion of the Chemistry section of the current Technical Specifications for Dresden and LaSalle, revisions are planned to the Updated Final Safety Analysis Reports for each station and to site procedures. Both are controlled by the provisions of 10 CFR 50.59. These revisions will contain the limits and actions that are currently in the Technical Specifications. The revisions will also describe the expected chemistry conditions and limits that apply during the application of the noble metals injection process.