December 7, 2000

Mr. Oliver D. Kingsley, President
Nuclear Generation Group
Commonwealth Edison Company
Executive Towers West III
1400 Opus Place, Suite 500
Downers Grove, IL 60515

SUBJECT: DRESDEN, UNITS 2 AND 3 - REQUEST FOR ADDITIONAL INFORMATION REGARDING THE INDIVIDUAL PLANT EXAMINATION OF EXTERNAL EVENTS (IPEEE) (TAC NOS. M83616 AND M83617)

Dear Mr. Kingsley:

By letter dated December 30, 1997, Commonwealth Edison Company (ComEd) submitted the results of the Individual Plant Examination of External Events (IPEEE) for Dresden Nuclear Power Station, Units 2 and 3. By letter dated March 30, 2000, ComEd submitted a revision to the Dresden IPEEE including a new fire risk model and a partial response to a request for additional information (RAI) on the fire analysis portion of the IPEEE. By letter dated August 25, 2000, ComEd submitted the remaining portion of their response to the RAI. The staff has identified additional information that is needed in order for them to complete their review of the revised IPEEE analysis of fire events. This RAI was reviewed by the "Senior Review Board" comprised of Nuclear Regulatory Commission (NRC) staff and consultants with probabilistic risk assessment expertise in external events. These questions were discussed with members of your staff on December 6, 2000. It was agreed that your response would be provided by January 31, 2001. Should your staff have any questions about this request, please contact me at (301) 415-2863.

Sincerely,

/RA/

Lawrence W. Rossbach, Project Manager, Section 2
Project Directorate III
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Docket Nos. 50-237 and 50-249

Enclosure: RAI

cc w/encl: See next page

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Lawrence W. Rossbach, Project Manager, Section 2
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cc w/encl: See next page

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Request for Additional Information (RAI)

Regarding the Revised Dresden IPEEE Fire Analysis

1. The revised Dresden fire analysis has not provided an explicit analysis of transient fire sources. It was noted in the submittal (see e.g., pg. 4-112) that transient fire sources contributed substantially to fire risk in the original analysis (72 percent of the Unit 2 fire core damage frequency and 56 percent for Unit 3). However, in the revised analysis, it appears that transient fire source frequencies have been added to the fire frequencies for fixed ignition sources, and that fire modeling considered only the fires from those fixed sources. This approach may under-estimate the importance of transient fire sources and may miss potential fire vulnerabilities.

   Transient fire sources are unique because they can occur virtually anywhere in the plant or at any location within any given fire area (despite administrative controls). Hence, transient fires may threaten cables or equipment that would not be directly threatened by fixed fire sources. For example, a cable "pinch-point" (a point where risk important cables converge) might not be located in close proximity to fixed ignition sources, but might be threatened by a transient fire. Fire modeling that is limited to the fixed sources might miss this cable pinch-point as a potential significant contributor to fire risk. It should be noted that the existence of administrative controls are not considered an adequate basis for screening transient fire sources from any given fire area.

   Please reassess the risk contribution of transient fire sources to plant risk. Include consideration of the potential contribution due to transient fire sources that are not tied to the locations of fixed fire sources. In particular, assess the fire risk contribution for transient fire sources in following fire zones: Auxiliary Electric Equipment Room (AEER) (6.2), Unit 3 (U3) Cable Tunnel (8.2.4), U2/3 Turbine Building (TB) Corridor (8.2.5C), U2/3 Standby Gas Treatment and TB Closed Cooling Water Heat Exchanger (8.2.6.C), Control Room Backup Ventilation Room (8.2.6.A), and Unit 3 Second Floor Reactor Building. (1.1.1.3).

2. The analysis of the Unit 3 Cable Tunnel (8.2.4) did not appear to consider some potentially important fire scenarios. One aspect is transient fire sources noted in question number 1 above. However, given that the cable tunnel "runs below the ground floor of the turbine building" (see Section 4.7.2.27), there may be a potential for other turbine building fires to impact this fire area. In particular, incidents involving the release of a large quantity of oil in the turbine hall (e.g., a turbine blade ejection or turbine lube oil leak/spill) might lead to oil cascading down into the cable tunnel from above (such as occurred during the fire at the Vandellos plant in Spain). This may lead to severe fire scenarios that might overwhelm the installed fire suppression systems.

   Furthermore, the submittal does not identify or discuss a corresponding Unit 2 Cable Tunnel. Hence, it is not clear if the Unit 3 Cable Tunnel is shared between the units, if the Unit 2 tunnel was not analyzed or was screened, or if there simply is no corresponding Unit 2 Cable Tunnel. If there is a corresponding Unit 2 Cable Tunnel, then some explanation of its treatment in the risk study is warranted, including consideration of the same questions raised here regarding the Unit 3 Cable Tunnel.

Please reassess the fire risk contribution of the Unit 3 Cable Tunnel including consideration of both transient fire sources and the potential for large oil spills/fires in the turbine building to impact this fire area. Describe the nature of the separation between the general areas of the turbine building and the Unit 3 Cable Tunnel. Provide a discussion of the corresponding configuration (or lack thereof) for Unit 2 and a similar analysis of the Unit 2 Cable Tunnel (if one exists) as requested here for the Unit 3 Cable Tunnel.

3. The IPEEE assessment assumed that fires will not propagate from panels that are "substantially sealed." This assumption may be overly optimistic and may result in missing potential fire vulnerabilities. In particular, it appears that the analysis of the AEER has dismissed the potential for cabinet-to-cabinet fire spread and for panels to damage overhead cables in many cases. Of particular concern in this regard is the potential impact of a fire that might cause damage to the functions associated with Unit 3 panels 903-31, 903-32 and 903-33 or the corresponding Unit 2 panels 902-31, 902-32 and 902-33 including their associated cables. If these panels (or their cables/functions) are damaged in some combination, it appears this could lead to loss of the main condenser, emergency core cooling system (ECCS), core spray (CS), residual heat removal (RHR), automatic depressurization system (ADS) and high pressure coolant injection (HPCI). Hence, the potential risk implications of such losses might be significant, even if the probability of the fire scenario is low.

   Please provide an analysis of the risk implications of fires that might involve functions of the above cited panel combinations including the consideration of panel-to-panel fire spread and assuming that damage to overhead cables might occur for fires in any or all of the cited panels. Include a detailed description of the panel configurations, contents, separation provisions, and proximity of each panel to cables associated with the other cited panels.