No. 94-116 FOR IMMEDIATE RELEASE
Tel. 301/415-8200 (Thursday, July 21, 1994)

# NRC AGREES WITH COMMONWEALTH EDISON PLANS TO RESTART AND OPERATE TWO NUCLEAR REACTORS

The Nuclear Regulatory Commission staff has completed its safety evaluation of the recently-identified cracks in the reactor core shrouds in Unit 1 of the Quad Cities nuclear power plant and Unit 3 of the Dresden nuclear power plant.

The staff has concluded that, despite these cracks, the reactors continue to meet current regulatory requirements and can be operated safely for a period of 15 months.

However, the staff has concluded that Commonwealth Edison must take actions to assure the long-term integrity of the core shrouds. The company has indicated that over the next six months plans for a permanent repair of both shrouds will be developed.

The largest cracks extend completely around the circumference in the lower part of the shroud which is a two-inch thick stainless steel shell located inside of the reactor vessel and used to direct cooling water around and through the nuclear fuel. The cracks extend only partially through the wall of the shroud.

As part of its assessment, the staff reviewed submittals from Commonwealth Edison Company (which proposed operation of Dresden 3 and Quad Cities 1 for 24 months and 18 months, respectively, without repair of the cracked shrouds). It also conducted its own independent analysis to determine whether existing requirements governing the operation of the two facilities would still be satisfied while operating with partially-cracked shrouds and to assess potential risks that might be associated with such operation but were not considered as part of the staff's original licensing review.

The staff based its conclusion that the structural integrity of the shrouds would be maintained under both normal and postulated accident conditions by using technically conservative assumptions about the depth of the current cracks, the rate at which the cracks might grow and the stresses which the shrouds

are likely to have to withstand in the event of a postulated accident.



While the staff concluded that the core shrouds will remain intact for a 15-month period of operation, it also reviewed a Commonwealth Edison safety assessment which assumed a 360-degree crack through-the-wall in the lower elevation of a shroud.

The staff also conducted its own independent assessment of the safety significance of operation with a 360-degree, through-the-wall crack. The assumption of a 360-degree through-the-wall crack is highly conservative and was made to understand the safety significance if the worst case conditions were postulated. The staff estimated the frequency of accidents which would be of concern (such as a loss-of-coolant accident or main steam line break), and the probability of failure to mitigate the consequences of these events. As a result, the staff concluded that the chances of core damage from an accident involving a failed shroud are considerably lower than 1 in 10,000 to 1 in 100,000 per year.

In addition to addressing Commonwealth Edison's request, the staff is continuing its generic assessment of the boiling water reactor core-shroud-cracking issue throughout the industry. In this regard, the NRC is planning to issue, in the near future, a generic communication which will require licensees to address this issue.

The Boiling Water Reactor Owners Group is working closely with the NRC staff in assessing the significance of this issue and in developing plans for its permanent resolution.

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