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UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of	)	
	)	
COMMONWEALTH EDISON CO. PANY	)	Docket Nos. 50-454-OL
	)	50-455-OL
(Byron Station, Units 1 and 2)	)	
	)	

MEMORANDUM OF COMMONWEALTH EDISON COMPANY
IN OPPOSITION TO INTERVENORS'
MOTION FOR LEAVE TO FILE
TESTIMONY OF DR. WILLIAM H. BLEUEL

On August 13, 1984 Intervenors presented a motion to admit the testimony of Dr. William H. Bleuel as a witness on their behalf. The motion was accompanied by Dr. Bleuel's proposed testimony. When this matter was first brought to the attention of the Licensing Board on July 23, 1984, the Chairman observed that a truly extraordinary showing would be required to admit Dr. Bleuel's testimony, (Tr. pp. 8579-80). While Intervenors assert that such a showing has been made, it is apparent that Dr. Bleuel's testimony adds nothing relevant to the record in this proceeding and that two of the three major topics addressed by his testimony are also addressed by other witnesses sponsored by Intervenors.

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Dr. Bleuel's qualifications are not those of an expert whose opinions could materially assist the Board and thus his testimony will add little of substance to the record. He has no experience with nuclear power plants. (Bleuel Test. p. 2). He has not analyzed the engineering criteria and methods used to evaluate the "Byron Reinspection Program" (sic) nor is he competent to do so. (Bleuel Test. p. 13). His direct experience with quality assurance in a commercial setting ended in 1964 when he left Endevco where he had been a quality control engineer. (Bleuel Attach. A, p. 1). Appendix B to 10 CFR 50 was not adopted by the Atomic Energy Commission until 1970. Dr. Bleuel's only other apparent contact with quality assurance matters ended in 1975 when he stopped teaching production management at the University of Rochester. (Bleuel Attach. A, p. 2). Dr. Bleuel's expertise evidently lies in the discipline of management science as applied in the fields of reliability engineering and maintainability engineering. (Bleuel Test. p. 2). The pertinence of this expertise to the issues before the Board is not explained in either the motion or the testimony. Moreover, the testimony itself discloses that the cursory and incomplete review of the issues made by Dr. Bleuel virtually guarantees that it will be of little value to the Board.

A. A "failure modes and effects analysis" is well beyond the scope of the issues before this Board and is in any event, not required for this Board to reach conclusions regarding CECo's quality assurance program.

Dr. Bleuel's major conclusion in his testimony is that "without performing a failure modes and effects analysis, one cannot have reasonable assurance that adequate reliability of the plant and its associated safety requirements can be achieved." (Bleuel Test. p. 7). After conducting this analysis, which would be based on a fault tree for each system (Bleuel Test. p. 5) one would be able, according to Dr. Bleuel, to calculate reliabilities for systems which would "more accurately ... predict the likelihood of a safety-significant failure". (Bleuel Test. p. 10). Other than a reference by way of example to Mr. Tuetken's categorization of Hatfield inspection procedures by safety significance (Bleuel Test. p. 8), Dr. Bleuel does not limit his comments regarding a "failure modes and effects" analysis to Hatfield, Hunter and PTL. Indeed, he explicitly asserts that this analysis focuses not "on individual items viewed in isolation, but on the item in the context of the system as a whole". (Bleuel Test. p. 5). As the attached affidavit of George Klopp describes, the only way to analyze the effect of the failure of a single component on the safety of the Byron Station using fault trees is to conduct a probabilistic risk assessment ("PRA"). (Klopp affidavit ¶3). The PRA developes fault trees and event trees for postulated failures of systems (taking appropriate

account of redundant systems and components), no one of which will be wholly within the scope of any one contractor's work. (Klopp affidavit ¶5). Moreover, as established by Mr. Klopp's affidavit (Klopp aff. ¶3), the Byron FSAR contains many examples of failure modes and effects analyses and a Byron PRA utilizing fault tree methodology was discussed during the initial hearings. (See prepared testimony of George T. Klopp ff. Tr. 6750 at p. 10). The Byron PRA was made available to the intervenors. (Tr. p. 2086). Dr. Bleuel obviously lacks knowledge of the overall process by which the safe operation of Byron has been analyzed. Relating the Byron PRA to the results of the reinspection program would be a truly monumental, time consuming effort of little value.

The suggestion that such an analysis is necessary is based on a misconception of the purpose of the reinspection program and a total lack of comprehension of the licensing process for nuclear power plants. The reinspection program, as recognized by Dr. Bleuel, was initially designed to respond to one Severity Level IV item of noncompliance which dealt with the qualifications of quality control inspectors. The data which was accumulated in the reinspection program was also used to form a part of the engineering judgment that the work performed by a number of site contractors was adequate. In these remanded hearings the scope of the inquiry into work quality was limited to Hatfield, Hunter and PTL, and Applicant and Staff witnesses have addressed the adequacy of the work of those three contractors. (See generally, prepared testimony of

L. O. Del George, ff. Tr. 8406 at 47-53; W. B. Behnke, ff. Tr. 9336; R. V. Laney, ff. Tr. 9339; J. Keppler, ff. Tr. 10,135; and NRC Staff Panel, ff. Tr. 9510 at 4). No witness testified that the results of the reinspection program, standing alone, constituted a basis for reaching a conclusion about the quality of the work of Hatfield, Hunter and PTL. Each relied on the quality assurance program and the NRC's inspection and enforcement effort as the primary basis for a conclusion regarding quality of the work. (See e.g. Testimony of J. Keppler, ff. Tr. 10,135 at 2). Dr. Bleuel's ignorance of these other bases for a conclusion regarding work quality is understandable given his admitted lack of familiarity with nuclear power plants and the fact that he limited his review of Byron-specific materials to the Reinspection Program Report and the direct testimony of three of Applicant's witnesses. (Bleuel Test. p. 4).

Perhaps the most convincing objection to admission of Dr. Bleuel's testimony is the futility of performing a PRA in order to evaluate the quality of construction. As explained by Mr. Klopp, the PRA process depends on industry experience to identify which failures are most likely. This in turn is based on an assumed condition regarding construction quality based on existing power plant experience. But the quality of construction at Byron and its verification is one of the issues addressed by the Byron Reinspection Program. In short, use of a PRA to assess construction quality would not be helpful since the PRA assumes a level of construction quality as one input to the analysis. (See Klopp aff. ¶6).

The irrelevant content of Dr. Bleuel's testimony is confirmed by the Commission's Statement of Policy regarding safety goals for the operation of nuclear power plants. (48 F.R. 10772, March 14, 1983). The Commission has directed that:

> The qualitative safety goals and quantitative design objectives contained in the Commission's Policy Statement will not be used in the licensing process or be interpreted as requiring the performance of probabilistic risk assessments by applicants or licensees during the evaluation period. The goals and objectives are also not to be litigated in the Commission's hearings. The staff should continue to use conformance to regulatory requirements as the exclusive licensing basis for plants.

As shown above, Dr. Bleuel's proposed analysis would require this Board to consider the Byron PRA as it relates to the reinspection program, in direct contradiction of this statement of policy. Whatever the merits of fault tree analysis in industries in which Dr. Bleuel is experienced, it is of little value in establishing the quality of construction of a nuclear power plant. (See Klopp aff. ¶7).

B. Dr. Bleuel's remaining testimony is cumulative and not based on his asserted expertise.

Dr. Bleuel addresses two additional matters: the inadequacy of Sargent & Lundy's ("S&L") engineering evaluations and an asserted lack of conservatism in the reinspection program by reinspecting the first three months of inspections as a sample of an inspector's work. Both of these points are covered

in the testimony of others. Mr. Stokes' prepared direct testimony at pp. 6-8 is a virtual duplicate of Dr. Bleuel's observations regarding S&L's claimed lack of objectivity in evaluating discrepancies. Similarly, Dr. Bleuel's statements regarding the validity of a sample based on the first three months of an inspector's work is one of the main topics of Dr. Kochhar's prepared testimony.[1/]

In addition, it is apparent that Dr. Bleuel's observations regarding S&L are intuitive, rather than an expert opinion based on an evaluation of facts. Dr. Bleuel concedes that he has not analyzed the S&L criteria and methods and would not be competent to do so. (Bleuel Test. p. 13). His point is a "universal" one, yet without an ability to evaluate the engineering methods and criteria actually used by S&L, the point is meaningless. Dr. Bleuel then indulges in what can only be characterized as baseless speculation regarding an alleged bias in S&L's engineering evaluation. (Bleuel Test. p. 16) This speculation is used as a springboard for an opinion that only an "independent" engineering firm should be used to conduct the engineering evaluations. Independence is defined by Dr. Bleuel by reference

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1/ Dr. Bleuel's conclusions regarding the first three months of an inspector's experience as a representative sample is based not on observation of inspectors, but rather on observation of workers performing repairs. The relevance of this experience is doubtful.

to Chairman Palladino's letter to Congressman Dingell dated February 1, 1982. (Bleuel Test. pp. 15-16). This Board has already ruled that Chairman Palladino's letter is not an appropriate standard by which to judge the adequacy of the reinspection program and is irrelevant. (Tr. pp. 8637-38). A quotation from this same letter in direct testimony can only be interpreted as an attempt to circumvent the Board's ruling on the admissibility of the letter itself.

Finally, Intervenors' suggestion that Dr. Bleuel's testimony is "rebuttal" and therefore timely and appropriately filed demonstrates a total misunderstanding of this licensing proceeding. Dr. Bleuel's principal point, the need for a failure modes and effects analysis, can only be characterized as a part of Intervenors' case in chief, since no witness sponsored by Applicant or the Staff has previously discussed this method of analysis. Dr. Bleuel's remaining testimony, while at least partially responsive to Applicant's evidence is, as described above, cumulative.

Respectfully submitted,

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