UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

RECEIVED

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

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In the Matter of	)	
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PENNSYLVANIA POWER & LIGHT COMPANY	)	Docket Nos. 50-387
and	)	50-388
ALLEGHENY ELECTRIC COOPERATIVE, INC.	)	
(Susquehanna Steam Electric Station,	)	
Units 1 & 2)	)	

ENVIRONMENTAL COALITION ON NUCLEAR POWER ANSWERS
TO FIRST ROUND NRC STAFF INTERROGATORIES

General Questions

G-1. The ECNP Intervenors (ECNP) have made no decisions to date as to which contentions will be supported by expert witnesses or who might be asked to testify as an expert witness.

G-2. To date, ECNP has not identified any specific documents to be used either as support for the ECNP contentions or for cross-examination.

Contention 1

S-1.1. This belief comes from action by the Commissioners themselves in issuing the March 2, 1978, Order in the TMI-2 proceeding.

S-1.2. Above and beyond the errors made in estimating releases of radon-222 from abandoned mines and mill tailings, the AEC ignored the laws of physics in arriving at its estimate of 74.5 curies per year release attributable to one year's operation of a reference reactor. This mistake was codified when Table S-3 was incorporated into 10 CFR. No supporting evidence has yet been offered by either AEC or NRC personnel that the 74.5 curie figure was accurate.

S-1.3. The answer to this question is contained in the testimonies of Dr. Chauncey Kepford offered at the TMI-2 and Perkins proceedings, July 5, 1977, and June 8, 1978, respectively, of which the Staff was provided copies.

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S-1.4. ECNP Intervenors believe as many as possible of the assumptions should be replaced with experimentally gathered data.

S-1.5. We do not know what such effects are. That is the reason for the need for experimental evidence.

S-1.6. See answer to S-1.3.

S-1.7. See answer to S-1.3. In addition, Dr. Kepford believes the NRC Staff has chosen a non-representative and non-conservative value in its conversion from radon daughter dose per Working Level Month (WLM). See Draft Generic Environmental Impact Statement on Uranium Milling, NUREG-0511, Vol. 11, page G-44. The 0.5 rad dose to the bronchial epithelia is very near the low end of the range cited in Ref. 9 of the Draft GEIS. This could lead to an underestimation of the dose by a factor of up to 40. Another potential source of error is in the use of an RBE of 10. As specified in the ECNP Petition, evidence has been published which suggests that for high LET radiation, the RBE may be much greater than 10 at low doses. Here the error may be as large as a factor of 10, or even larger. We could only speculate as to the reasons for the continuing policy of the NRC to underestimate the effects of ionizing radiation on humans.

S-1.8. ECNP Intervenors do not understand the meaning or intent of this question.

S-1.9. See answers to S-1.3 and S-1.7.

S-1.10. The answer to this question has been presented repeatedly to the NRC Staff in numerous filings on the radon-222 question in the TMI-2 proceeding, NRC Docket 50-320.

S-1.11. ECNP Intervenors have not made an assessment of the treatment by the NRC of all isotopes, and therefore cannot answer this question.

S-1.12. In general, the NRC has failed to account for the health effects of long-lived radioactive isotopes beyond a period of about 50 years. These health effects are underestimated for isotopes with half-lives significantly longer than 50 years. ECNP Intervenors have made no estimates as to the magnitude of such errors, but have every reason to believe, in many cases, the errors are enormous, based on the radon-222 situation as an example. The obvious cause of the "health effect", a euphemism for a premature, avoidable, death by cancer, is exposure to ionizing radiation.

S-1.13. See answer to S-1.12.

S-1.14. See answer to S-1.13.

S-1.15. Since, as the Staff has known for about 2 years now, Dr. Kepford believes that the inclusion of the full health costs of radon-222 emissions (TMI-2 testimony) will tip the cost-benefit balance against the operation of any nuclear power plant, the inclusion of the consistently underestimated health effects due to other long-lived or short-lived radioisotopes will only serve to further sink the nuclear ship.

Contention 2.

The ECNP petition makes no reference to cesium-137, cobalt-60, and chlorine discharges from the Susquehanna facility.

Contention 3.

S-3.1. If it is assumed that there are approximately 890,000 tons of U_3O_8 as known reserves (Draft GEIS, Uranium Mining, Table 3.6) and if it is assumed that 100% of these reserves can be mined and recovered, then there is fuel for about 150 GW(e) of nuclear generating capacity, assuming a lifetime use of 6000 tons of U_3O_8 per 1000 MW(e) reactor. This 148 GW(e) is approximately equal to the operating and being built, generating capacity of the U.S. Since 100% recovery of U_3O_8 from these is not realized, and since 100% recovery of the

ore from the mines is not always realized, an immediate shortfall might be expected. If more reactors are built, a larger shortfall might occur prior to the end of the lifetime of Susquehanna 1 and 2.

S-3.2. See the portion of the Kepford testimony in the Perkins proceeding entitled "Resource Consumption," and the answer to S-3.1.

S-3.3. No specific assessments have been made.

S-3.4. See answers to S-3.1-3.

S-3.5. See answer to S-1.15.

Contention 5.

S-4.1. The answer to this question is largely dependent on the marketing practices of the Applicant. ECNP Intervenors believe that if the Applicant chooses to reduce its annual electricity growth rate to zero, it can do so. The Applicant can also actively promote electricity sales growth. ECNP Intervenors have no way of knowing what electricity growth rate will occur, but zero can occur, if the Applicant will allow it.

S-4.2-4. None have been made.

Contention 5.

S-5.1. ECNP Intervenors are not aware of any dose models used by the NRC that are accurate and are not obsolete. The burden of proof lies upon the Staff of the NRC to ensure that the models used by the Staff are accurate and up to date. If this information is available, we would appreciate its being made available to ECNP on discovery.

S-5.2. We believe that only accurate and up-to-date models should be used.

S-5.3. ECNP Intervenors have made no such calculations. However, as specified in the ECNP petition, evidence has appeared in the literature that states the NRC has underestimated iodine-131 transfer coefficients. In addition, we have requested on discovery upon the NRC Staff a translation of a report from the University of Heidelberg which discusses this very topic.

It has not yet been received.

S-5.4. See answer to S-5.3.

S-5.5. None have been made.

S-5.6. The answer to this question has been answered with particularity to an article in Health Physics. ECNP Intervenors have made no specific calculations to determine the appropriate factors.

S-5.7. See the answer to S-5.6.

S-5.8. See the answer to S-5.6.

S-5.9. See the answer to S.5.6.

Contention 6.

S-6.1. This question was phrased to limit the answer to that world of fantasy known as 10 cfr. If there were any reason whatsoever to believe that no accident greater than design basis would ever occur, or that all safety systems would always work as specified, and all operators would always know exactly what to do, and would always make the right decisions, then this question would be less ludicrous. However, the occurrence of a Class 9 accident at TMI-2 changed things. The long-suppressed update of WASH-740 states that in the event of an uncontained core meltdown, "...there could be deaths out to 150 km". (WASH-740 update, document 84, page 5). The reference here is to deaths due to acute radiation exposure. Such exposures would exceed the very liberal radiation standards and protective action guides. These exposure levels have never been acknowledged to be acceptable to those at risk.

S-6.2. See answer to S-6.1.

S-6.3. ECNP Intervenors have made no such calculations.

S-6.4. ECNP Intervenors have made no such calculations. However, the adequacy of the emergency plan may be assessed by the total inability of the Commonwealth of Pennsylvania and the NRC to react quickly to the real emergency at TMI-2 in March and April, 1979.

S-6.5. The TMI-2 accident demonstrated that accidents can happen at licensed facilities which are much more severe than contemplated by the Commission's regulations. The TMI-2 emergency plan met all applicable NRC regulations, but was found to be unworkable when a real-world accident happened.

Contention 7.

S-7.1. This belief rests with the belief that the structures have never been tested under realistic accident conditions.

S-7.2. ECNP Intervenors cannot identify these forces, as such a task is far beyond our financial capability. That burden lies with the NRC Staff and the Applicant. Further information on this subject is currently being sought on discovery.

S-7.3. We have made no such calculations, but believe that reliance on realistic, experimental data is preferable to reliance on unsupported or even unsupportable, speculative estimations and extrapolations. Thus, until solid evidence shows that any and all blowdown forces can be withstood, ECNP Intervenors see no reason to believe they can be.

S-7.4. Pipe cracks at other nuclear power plants may render these plants unsafe to operate, but, in general, will not affect the Susquehanna facility.

S-7.5. The answer to this question is, by its very nature, far more answerable by the NRC Staff, and the full and complete answers should be supplied to all parties, even without discovery.

S-7.6. See the answer to S-7.5.

S-7.7. " " " " " " " " " " "

S-7.8. " " " " " " " " " "

S-7.9. To the best of our knowledge, the consequences to the public to date have been small. However, that is no assurance that the consequences will always remain small.

S-7.10. No calculations have been made.

S-7.11. Nozzle cracks at other facilities do not necessarily render Susquehanna unsafe to operate.

S-7.12. ECNP Intervenors do not know. The NRC Staff should supply the answer to this question to all of the parties in this proceeding.

S-7.13. See the answer to S-7.12.

S-7.14. " " "

S-7.15. See the answer to S-7.9.

S-7.16. ECNP Intervenors would have more faith in the safety of nuclear power plants, like Susquehanna 1 & 2, if the owners, designers, and manufacturers also had some such faith. However, as long as those owners, designers, and manufacturers value their individual and collective corporate survival as more important than the survival of those individuals placed at risk by the entire nuclear fuel cycle, or those thoroughly terrorized by accidents like TMI-2, we will continue to have no faith in the safety of nuclear power plants. That includes no faith in the calculated probabilities of accidents, including contributions to risk from ATWS.

Contention 8.

S-8.1. No such statement alluded to here was made in the ECNP Intervenors' contention on this subject.

S-8.2. See the answer to S-8.1.

S-8.3. " " " "

S-8.4. The answer to this question is being sought on discovery from the NRC Staff.

Contention 9.

S-9.1-6. The ECNP petition contains no reference to the subject of this question.

S-9.7. See the answer to S-1.15.

Contention 18.

S-18.1. ECNP does not know why other means cannot be used. It was not an ECNP decision to abandon other means in favor of the use of energy intensive, dangerous chemicals so as to reduce employment rolls.

S-18.2. ECNP has made no such allegation in its petition.

S-18.3. Irrelevant. See S-18.2.

Judith H. Johnsrud

Dr. Judith H. Johnsrud
Co-Director, ECNP
Co-Representative of
the ECNP Intervenors

Sworn to and subscribed to
before me this 29th day
of June, 1979.

Rose V. Marriott

My Commission expires Jan 25, 1983

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

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	)	
(Susquehanna Steam Electric Station,	)	
Units 1 and 2)	)	

CERTIFICATE OF SERVICE

I hereby certify that copies of "NRC STAFF'S MOTION FOR AN ORDER COMPELLING ENVIRONMENTAL COALITION ON NUCLEAR POWER TO PROPERLY RESPOND TO THE STAFF'S INTERROGATORIES" in the above-captioned proceeding have been served on the following by deposit in the United States mail, first class, or, as indicated by an asterisk, through deposit in the Nuclear Regulatory Commission's internal mail system, this 13th day of July, 1979:

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