

POOR ORIGINAL

DOCKET NUMBER
PROD. & UTIL. EAC 50-289

UNITED STATES ATOMIC ENERGY COMMISSION

In the matter of

Docket No. 50-289

Metropolitan Edison Company

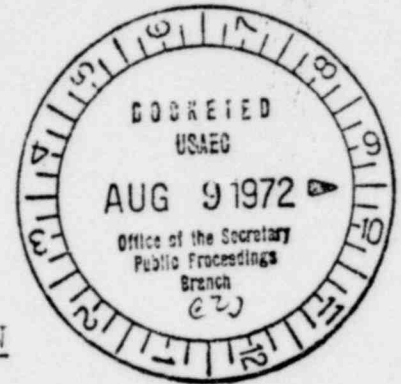
Pennsylvania Electric Co.

and

Jersey Central Power and Light Company

Three Mile Island Nuclear Station

Unit 1



PETITION FOR INTERVENTION

The Citizens for a Safe Environment, an unincorporated organization consisting of individuals who reside in Harrisburg and the surrounding townships and boroughs and other political sub-divisions, and York - and the Environmental Coalition of Nuclear Power, on their behalf and on behalf of their members, supporting individuals and organizations hereby petition the Atomic Energy Commission for leave to intervene in this proceeding pursuant to the Commission's rules of practice and state:

1. Petitioner, Citizens for a Safe Environment, is an unincorporated association comprised of citizens and residents of the Harrisburg area whose membership includes residents of said area, all of whom are interested in the dissemination of information and stimulation of public awareness and involvement in the study of nuclear power. Said organization, by its past activities and conduct, has exhibited a special interest in the protection of the natural resources of the Susquehanna Valley

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particularly in the area of the City of Harrisburg, in the conservational, recreational, economic, aesthetic and community impact of nuclear power plant development in said area. Said group and the members thereof are first and foremost concerned with the safety of the operation of said nuclear plant, the radiological and operational effect on the public health, welfare and safety. Petitioner further asserts that it and its members will be directly affected by the issuance of an operational permit in that its members are residents of the area directly affected by the operation of the proposed nuclear plant.

2. The Environmental Coalition on Nuclear Power is an unincorporated association comprised of twenty-nine organizations in the Pennsylvania and New Jersey area. Its membership includes residents of both the States of Pennsylvania and New Jersey, including residents of the Harrisburg-York area. Said organization and its members are concerned with the same interests and set forth for the Citizens for a Safe Environment. To that extent, the same is herein incorporated by reference and part hereto.

3. Petitioners are concerned and involved with the following contentions concerning the application herein for an operating license. The list of contentions herein is not a full and complete list hereof since petitioner has not been afforded an ample and reasonable opportunity to review fully the application herein for an operating license and the Atomic Energy staff Safety Evaluation report, particularly, because of the tragic

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and devastating flood of June 22 - 24 which has directly affected petitioner and its members. Petitioner had served notice on the Atomic Energy Commission through its counsel requesting an extension of time to file this petition. Accordingly, the petition herein is not an exhaustive statement of all contentions of petitioner and petitioner again, hereby, seeks leave to file further contentions within a reasonable period of time herein.

(a) Petitioner contends that no operating license may be and should be granted until such time that the AEC or the applicant can demonstrate that the high level radioactive waste arising from the operation of said plant will be transported from said plant and reprocessed in a manner assuring the complete protection of the public health and safety.

(b) The releases of radioactive materials to unrestricted areas during normal operation, particularly tritium releases, shall be in violation of Commission's rules, particularly the low as practicable standards and the proposed Appendix I Part 50.

(c) Plant has not been designed and constructed to meet the requirements of Part 100 of the Commission's rules, particularly with respect to releases that might occur during a maximum credible accident. It is further asserted that applicant's analysis of the maximum credible accident and releases therefrom is in violation of the Commission's rules in that the worst maximum credible accident would be an accident that would release radioactive effluents greater than those set forth by the applicant in its Safety Analysis Report.

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(d) The applicant has failed to design and construct the said plant in accordance with part 50 requirements, particularly appendix A, and especially with reference to the construction of the containment, the fuel handling building, pumps, pipes, and valves. The petitioner further asserts that the ASME code has not been fully complied with, especially in that petitioner has failed to design and construct the components to withstand all dynamic pressures, including hydraulic transient pressures that may occur during the lifetime of the plant.

(e) The plant cannot be safely operated in that the fuel cladding and fuel rod assembly parts are so designed and constructed as to allow radioactive releases into the reactor cooling system and subsequently to the environment that would exceed the lowest practicable standards.

(f) The reactor cooling systems are not designed and constructed so that they will function during an emergency. Petitioner incorporates herein the contentions set forth by the National Intervenors at the National hearings before the Atomic Energy Commission concerning the emergency cooling systems.

(g) Petitioners assert that the Commission's rules and regulations for levels of radioactive releases during normal and accidental conditions are improper and contrary to the health, welfare, and safety of the public and therefore invalid as a matter of law. Petitioners further contend that the applicant could not operate the plant so that the radioactive effluents during normal and accidental operational situations and occurrences would be at a level whereby the public health, welfare and safety

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would not be adversely affected.

(h) The structures, systems, and components important to the safety of the reactor's construction have not been designed, fabricated, erected, and tested with quality standards commensurate with the importance of the safety functions to be performed and in accordance with generally recognized codes, especially with reference to the containment, pumps, reactor rods system, emergency core cooling system, pipes and valves.

(i) The structures, systems, and components important to the safe operation of the facility have not been designed and located to minimize the probability and effects of fires and explosions or to withstand the effects of natural phenomena, particularly floods. Petitioners assert that the construction and design is not sufficient and in the event of the worst case said structures, systems, and components would lose their capability to perform their safety functions.

(j) The instrument in control of the proposed reactor does not have sufficient redundant systems so as to be able to monitor variables and systems over their anticipated range for normal operation and accident conditions and to maintain them within the proscribed operation of ranges.

(k) The reactor coolant pressure boundary has not been designed and constructed with sufficient margin to assure that when stressed under operating, maintenance, testing, and practicable

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accident conditions that a fracture would not occur and that the boundary behaves in a non-brittle manner. The petitioner asserts that the construction and design of the reactor coolant pressure boundary and containment have not been designed and constructed to reflect considerations of temperatures, stresses and other conditions under operating, maintenance, testing and postulated accident conditions, especially since all phases of the material properties, the effects of irradiation on material properties, the residual, steady-state and transient stresses and the size of flaws have not been fully and adequately considered.

(l) The petitioner asserts that the applicant has not constructed and used those systems available to control fission products--the concentration and quality of fission products released to the environment during normal and accidental conditions. Those systems used and constructed by the applicant for containment of fission products do not have suitable redundancies interconnections and leak detection to assure true full containment of fission products.

(m) The applicant has failed to comply with Appendix E Part 50 of the Commission's rules in that applicant has not and cannot establish an emergency plan that will assure evacuation of all environs, including the City of Harrisburg during the worst postulated accident.

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(n) The available water supply for the safe operation of the plant during normal emergency and accidental conditions is not sufficient to supply the necessary quantity of water for the

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safe operation and safe shut down of the nuclear reactor at the site. The applicant's meteorological data and studies as present in the RSAK are not proper assumptions, especially in that inversion conditions, icing and fogging, together with the synergistic effects of pollutants in the atmosphere that may occur during the operation of the plant, have not been fully analyzed and evaluated for calculating meteorological diffusion and dispersion factors and the low level radiation effect of fission product releases to the environment.

(o) The radioactivity released into the Susquehanna during normal and accidental conditions, especially tritium releases, would adversely affect the health and welfare of the public and the public's water supply.

(p) The applicant has not established that the control rod housing support structures and all components of the control rod mechanism are adequate and safe, especially that mechanism that prevents a drop of the control rod and the control rod guide tube and the possibility of collapse thereof from pressure differentials within the reactor. The applicant has not established that there will be no endangerment to the public health or safety from industrial sabotage or from air craft that may crash into any part of the nuclear plant.

(q) The quality controls, method of construction, qualifications of workmen and supervisors, testing of materials used and quality

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control program with all other relevant aspects of the construction of the plant in conformity with the applicable construction codes have not been sufficiently demonstrated and established to provide assurance that the plant has been constructed to prevent the operation of the plant from adversely affecting the public health and safety. Wherefore petitioners respectfully request that they be permitted to intervene as a party in this proceeding.

PRELIMINARY STATEMENT OF ENVIRONMENTAL CONTENTIONS

1. Applicant proposes to draw water from the Susquehanna River and pass it through the plant condensor cooling tower system. Information presented in Applicant Environmental Report is undefined and inadequate to effectively evaluate the environmental effects of the aquatic thermal discharge on the aquatic life in the Susquehanna River under all operating and shutdown conditions.

2. The environmental effects of release of large quantities of heat and water vapor and water vapor chemicals from the cooling tower systems on the surrounding countryside and river and streams have not been adequately considered. This could result in serious changes in local terrestrial and aquatic ecology from the cooling tower operation.

3. Insufficient evidence is presented to justify the fogging frequencies and extent stated in Section 5 of the environmental report. Plus there is no empirical information presented to verify

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that the mathematical models used for predicting local weather effects by cooling towers are in any way valid.

4. No comprehensive estimates are given of the extent of ground fogging and icing which will result from cooling tower operations under average and worst operating conditions. The brief statements which are made in Section 5 concerning possible fogging and icing are too brief and lack sufficient numerical quantification to judge whether these statements are correct or not.

5. No costs are presented on the visual aesthetic detriment from the cooling towers to the skyline surrounding the site.

6. No effects analysis is presented on possible synergistic effects between cooling tower, atmospheric effluent's and chemical pollutants produced by surrounding industries on plant, animal and human life forms nor between cooling tower, atmospheric emissions and plant gaseous radioactive emissions. Nor between plant thermal discharges into river and plant, liquid radioactive effluents and other chemical pollutants in the river from upstream industries. Nor between the chemicals from cooling tower blowdown and plant radioactive emissions and liquid thermal discharges. Various scientists have reported on many synergistics on the health of human and other life forms from some of the possible combinations which could result from various emissions from the plant or between particular plant emissions and chemicals from other industries.

7. A complete lack of evidence exists to back up applicant statement of no significant thermal shock effects on aquatic life

under all normal, abnormal and emergency shutdown plant conditions. John Clark in an article on thermal pollution in Scientific America has stated that as little as a 10 degree fahrenheit change in temperature can have a detrimental effect on aquatic fish life in a river system.

8. The total dissolved solids both average and maximum listed in table 3.7 - 1 of the Environmental Report added to the average existing dissolved solids of the Susquehanna River will result in dissolved solids concentration at outlet in excess of United States Public Health Drinking Water Standards of 500 ppm.

9. The effects on humans and other life forms from the liquid chemical effluents from the plant in terms of dissolved solids, suspended solids increased sulfates, chlorine residual, maximum and minimum PH, sodium ion, sodium hypochlorite, PO 4, spent resin filtration, alkalinity, have not been investigated under the most adverse flow conditions.

10. Using the intake and discharge temperature presented in table 3.7 - 1 of the Environmental Report under the worst conditions indicated for winter and summer, extensive thermal plumes could develop from the plant. Emergency shutdown of the plant could then result in extensive fish kills for those fish originally attracted to the thermal plume.

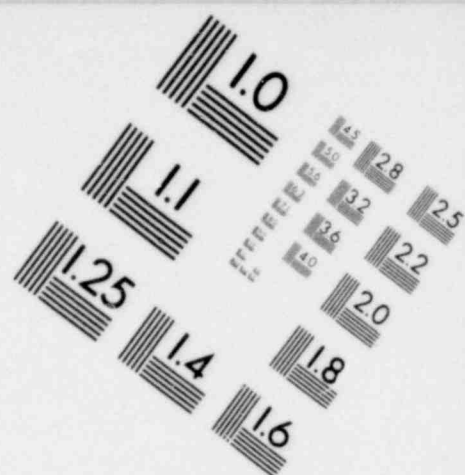
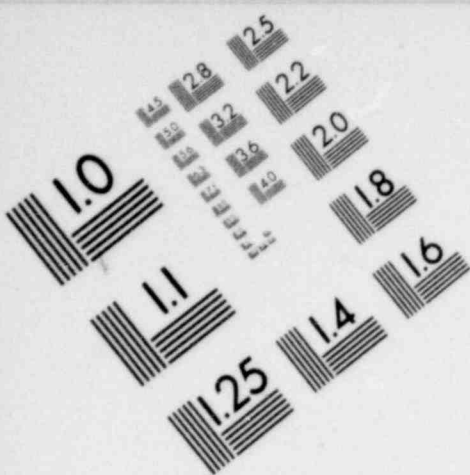
11. It does not appear from the information presented in 3.7 that the computed total dissolved solids concentration takes into account the effect of evaporation induced increased concentration of dissolved solids. Further, no analysis are presented which substantiate the dissolved solids figures presented in table 3.7 - 1.

12. A complete chemical breakdown and associated concentrations on the discharge effluent is not presented. Without this it is impossible to evaluate the potential chemical impact of the plant on the Susquehanna River.

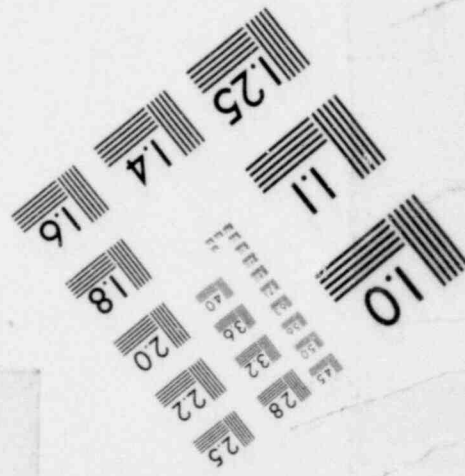
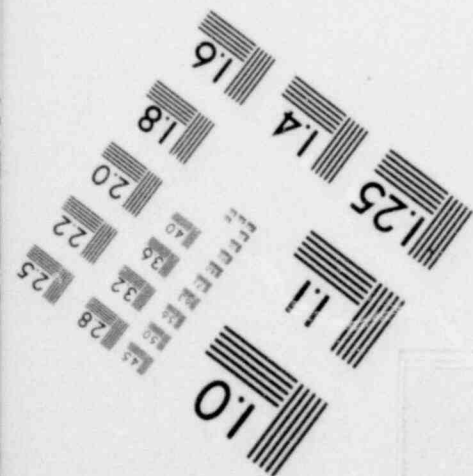
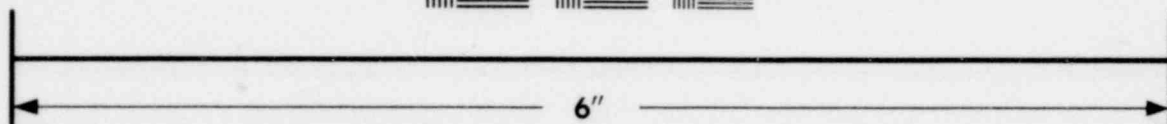
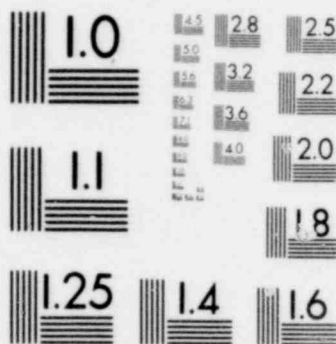
13. The diffusion and dispersion characteristics of the chemicals effluent are inadequately defined in the applicant's Environmental Report thus preventing the chemical environmental impact from being properly evaluated.

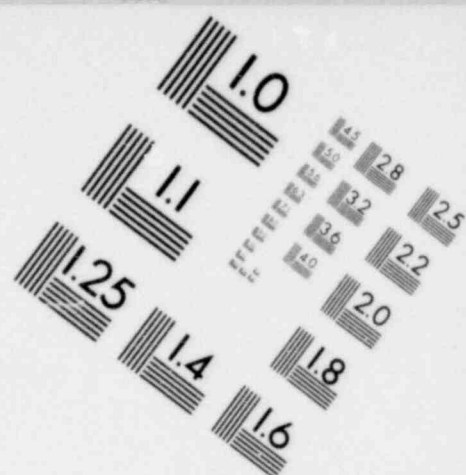
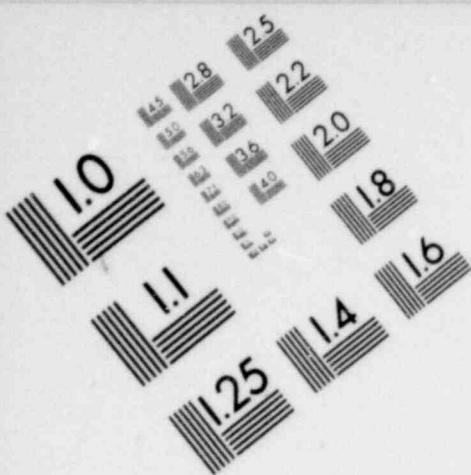
14. No analysis is presented of the aquatic life impact under low river flow conditions of evaporating large quantities of Susquehanna River water out the cooling towers.

15. Applicant states that chlorine concentrations in water waste discharges are negligible. A concentration of 1 ppm of residual chlorine has a devastating effect on plankton and aquatic animals. The statement of the applicant that the discharge will have no adverse effect on the environment is therefore without foundation in fact.

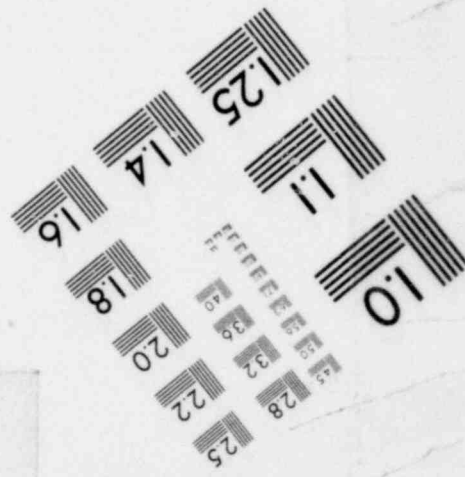
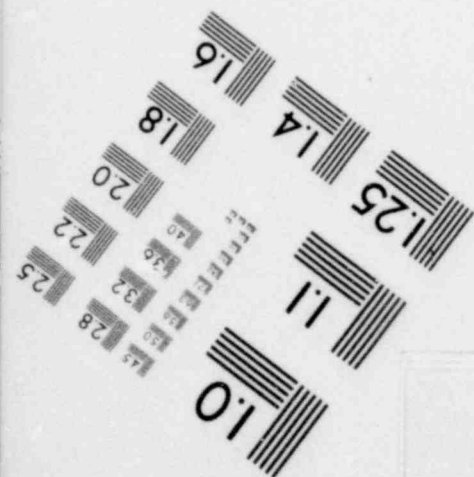
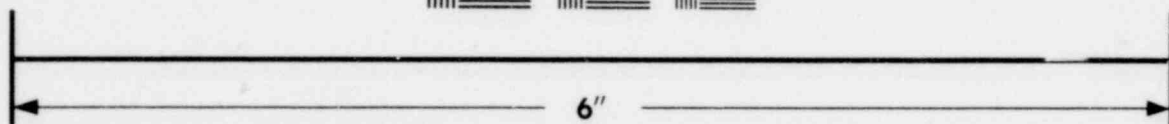
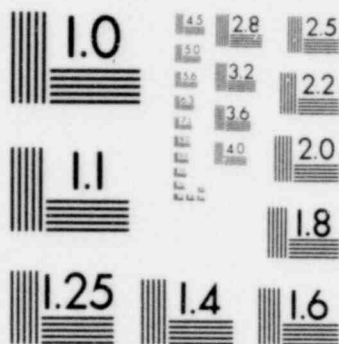


**IMAGE EVALUATION
TEST TARGET (MT-3)**





**IMAGE EVALUATION
TEST TARGET (MT-3)**



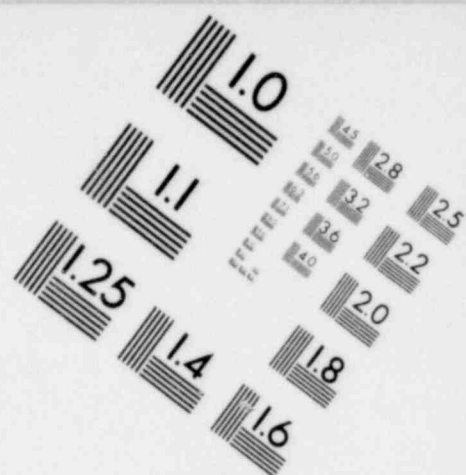
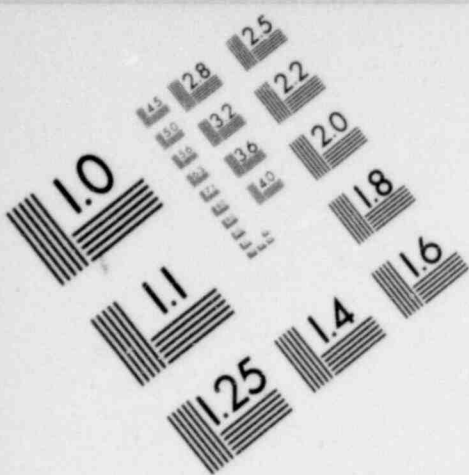
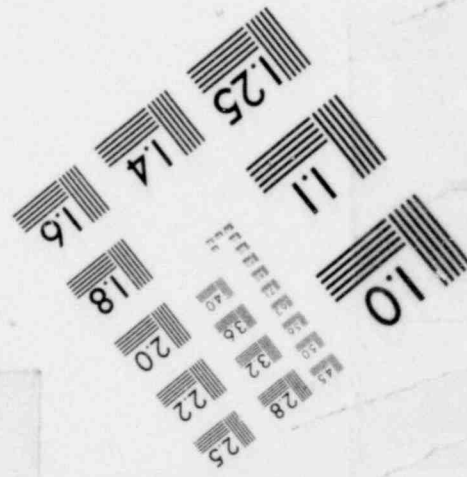
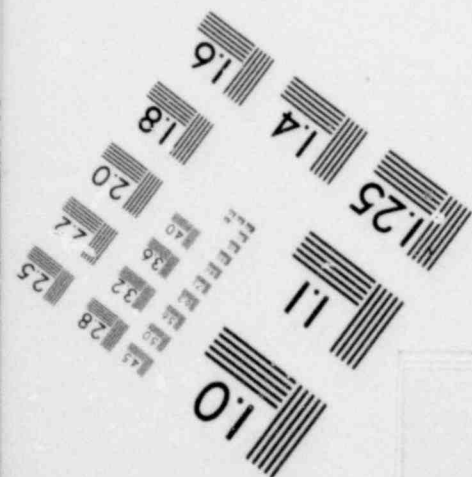
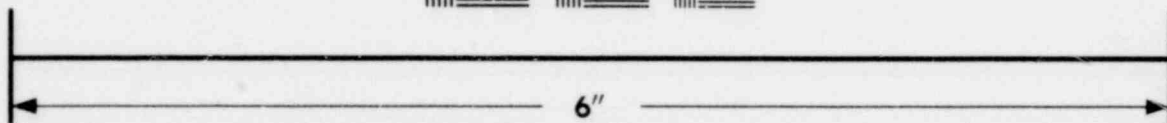
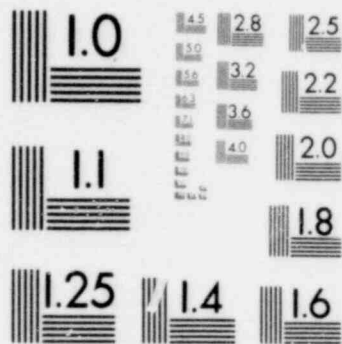
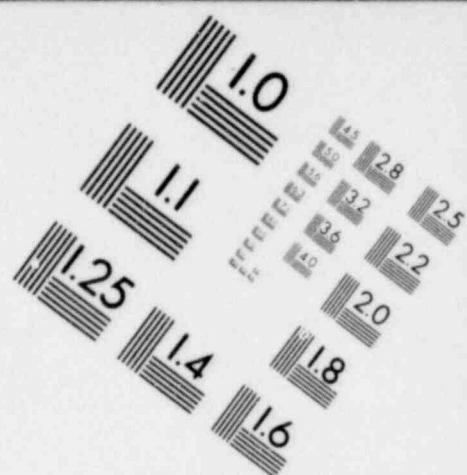
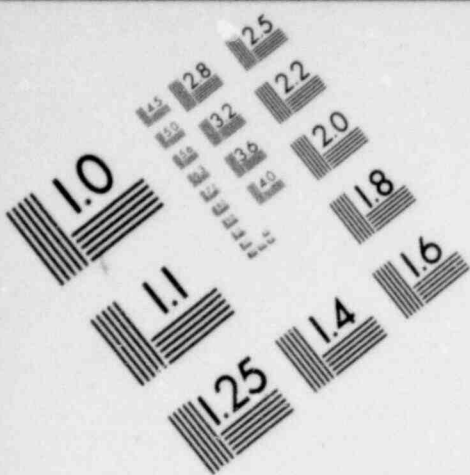
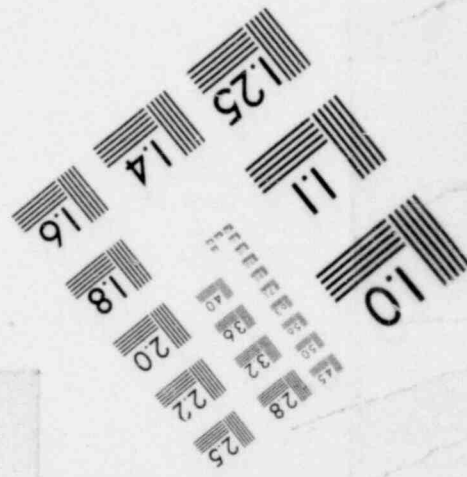
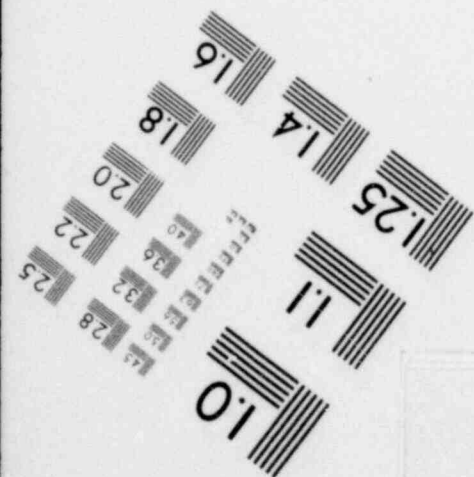
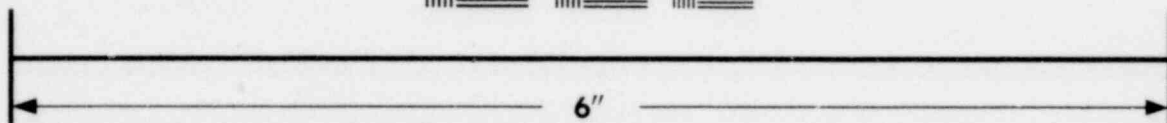
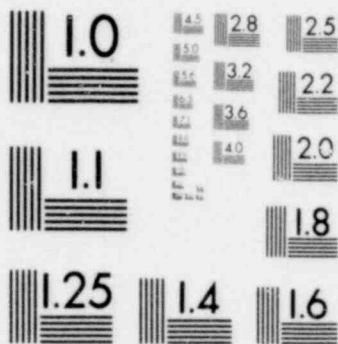


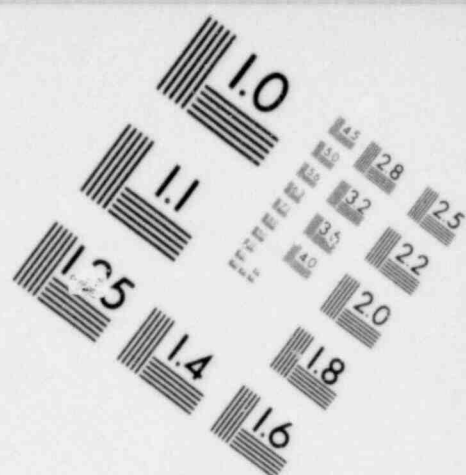
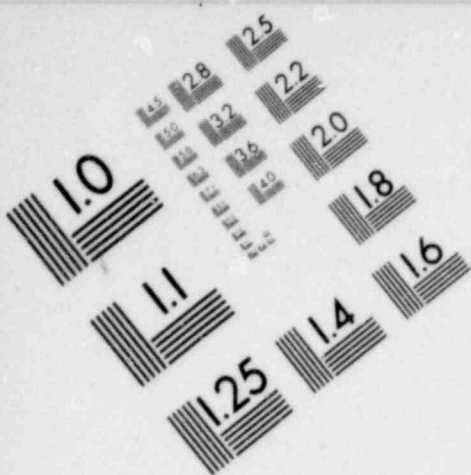
IMAGE EVALUATION
TEST TARGET (MT-3)



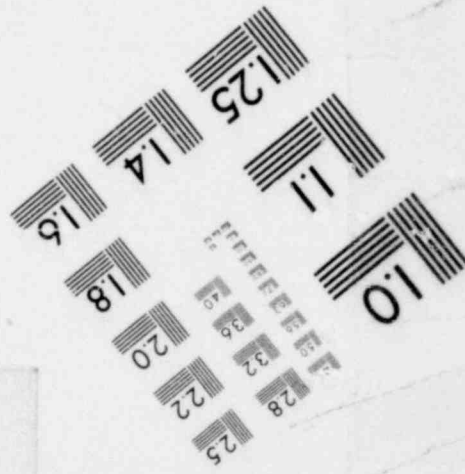
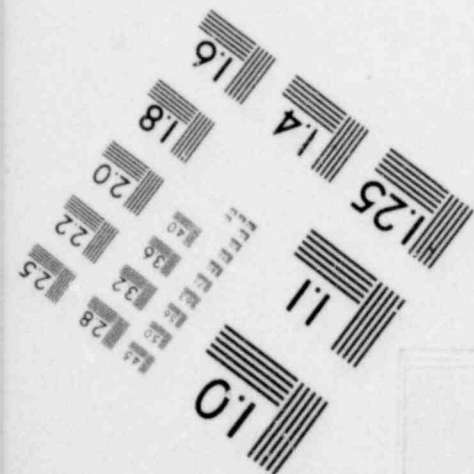
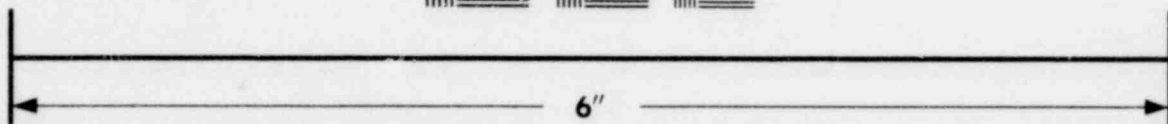
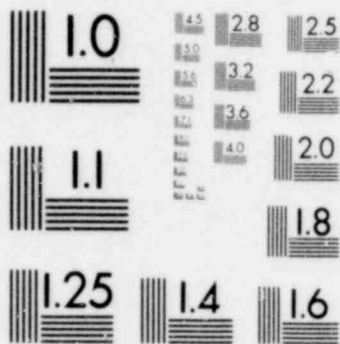


**IMAGE EVALUATION
TEST TARGET (MT-3)**





**IMAGE EVALUATION
TEST TARGET (MT-3)**



15. Petitioners contend that Applicant's Environmental Impact Statement fails to discuss or analyze fully the environmental effects, including cost/benefit and risk/benefit considerations, of the entire uranium fuel cycle: viz., the environmental damage from mining, strip-mining, milling, and enrichment of uranium; environmental impact of both the gaseous diffusion enrichment process and the generation of electricity for that process by the strip- and other mining and consumption of high sulfur coal; environmental damage attendant upon both chemical conversion of uranium hexafluoride into uranium dioxide and fabrication of uranium dioxide into nuclear fuel rods.

16. Applicant has failed to include in the Environmental Impact Statement the cost/benefit and risk/benefit analysis of those aspects of the complete uranium fuel cycle that follow the use of the fuel rods, particularly environmental effects associated with transportation, reprocessing and high level radioactive waste storage and monitoring. Neither normal operational impact nor abnormal operations and/or accident damage to the environment are discussed or analyzed.

17. Petitioners contend that, because the Atomic Energy Commission's as-low-as-practicable formula does not apply to spent fuel reprocessing plants, it is impossible that the total amount of radioactivity that reaches the environment as a result of the operation of Applicant's plant will exceed safe and tolerable limits.

18. Applicant has omitted from the "Long Term Effects of Plant Construction and Operation" in the Environmental Impact Statement any analysis of the environmental or monetary costs of plant operations and radioactive waste control and storage.

19. In "Long Term Effects of Plant Construction and Operation" Applicant has not discussed the environmental impact, costs and risks associated with a continued assured supply of uranium over the proposed life of the nuclear facility.

20. The Applicant's Environmental Impact Statement fails to discuss or analyze completely the cost/benefit and risk/benefit relationships attendant upon the development and production of fissile uranium by methods not presently in use, specifically the environmental effects of the Liquid Metal Fast Breeder Reactor, designed to provide plutonium for the fueling this or other light water reactor facilities in the event that insufficient uranium is available to operate the Applicant's plant during its projected lifetime.

21. The Environmental Impact Statement contains no discussion or analysis of the environmental effects of fuel failure resulting from fuel densification in a pressurized water reactor. Petitioners contend that the Application has not provided guarantee that technical specification limits with respect to radioactive emissions can be or will continue to be met throughout the plant life.

22. Planned post-operational surveillance programs are incompletely described and analyzed in the Environmental Impact

Statement in such manner as to preclude adequate assessment of long-term environmental effects of the facility. Petitioners contend that such monitoring system planning for long-term, post-operational environmental impact of idiological, thermal, chemical effects is an essential part of the environmental report and of the cost analysis required of the Applicant.

23. It is contended that Applicant has improperly and unrealistically forecast electric power demands upon which the need for this nuclear facility was based in that Applicant has used demand data biased by the effects of promotional advertising by a rate structure that fosters wasteful uses of electricity, by encouragement of such inefficient uses as residential space heating, by a rate based on capital expenditures, and by inadequate attention to trends in the national birth rate indicative of a decreasing rate of population growth to be provided for.

24. Petitioners further contend that the Applicant's economic analysis is incomplete and selective in such manner as to favor the economic position of a nuclear facility over fossil fuel or other alternative. Applicant's comparative costs analysis omits such necessary and concomitant costs as decommissioning costs, detailed analysis of fuel costs including indication of federal subsidies, and true costs of high-level radioactive waste disposal.

25. It is further contended that Applicant's economic analysis lacks justification based upon empirical data of operational experience for amortization of costs over a thirty-year plant year.

26. Petitioner contends that Applicant's economic analysis lacks analysis of costs of full-liability insurance coverage.

27. Petitioner contends that Applicant's analysis of future electric power demands is based upon a prior period of abnormally high short-term growth rate for the United States economy and especially for electric power consumption; it is incorrect in contemporary American society to reject, as Applicant does in the Environmental Impact Statement the possibility of zero growth, either population or economy. It is therefore contended that Applicant's analysis and discussion of alternatives to construction of the nuclear facility is incomplete in the absence of the diminished growth and no-growth alternatives.

28. Petitioners additionally contend that Applicant's demonstration of need for this nuclear plant and of alternatives is inadequate in the absence of an analysis based upon more efficient uses of energy resources.

29. Applicant has failed to present a complete and detailed analysis of all alternatives to a nuclear fission generating station, particularly with respect to alternative sources such as solar, geothermal, fusion, fuel cells, MHD, methane generation, national grid, and decentralized power schemes.

30. Petitioners contend that risks and costs to the environment outweigh all alleged benefits of this nuclear plant.

31. Petitioners contend that comparative economic costs of the nuclear facility based upon an 80% capacity factor are

unrealistically biased against fossil fuel plants; 80% capacity factor is higher than operating experience of existing reactors warrants.

32. Petitioners contend that environment values are endangered by the low reliability of nuclear power stations, compared with fossil fuel plants.

33. Petitioners contend, in the absence of evidence of a threshold effect below which radiation damage to living organisms does not occur, that adequate environmental protection requires Applicant to guarantee a zero release system in its plant and in all aspects of the fuel cycle.

34. Petitioner contends that the Applicant's emergency safety plan is inadequate and insufficient to provide for the protection or evacuation of the population of the Greater Harrisburg metropolitan area, in the event of an accident exceeding design basis accident; and that Applicant has failed to evaluate the costs of environmental recovery from an accident exceeding design basis accident.

35. Applicant assumes perfect mixing of thermal discharge waste water in York Haven pond. Perfect mixing is seldom, if ever, achieved. Throughout the "Environmental Report, Operating License Stage," the applicant uses averages of numbers such as average dose at site boundary, estimated dose to population in 50 mile radius, man-rem, etc. Such numbers without standard deviations or average deviations and some statement of the extreme values encountered are of little utility. Applicant concludes

that salt and copper sulfate fallout are negligible. Such a conclusion is unjustified. Applicant makes no real risk-benefit analysis.

36. The petitioner contends that the Construction of the reactor containment building and fuel handling buildings was not carried out in accordance with construction specifications and has resulted in structures incapable of withstanding the maximum loadings expected.

37. The "Safety Evaluation" by the DRL of the United States Atomic Energy Commission for Unit #1 Three Mile Island Nuclear Station, Dauphin County, Pennsylvania - Docket 50-289 dated 2/5/68 on page 33 indicates failure pressures obtained by parametric analysis indicate that during loss of coolant accident pressures of 52.0 P S I G can be expected. The containment vessel is designed for 55 P S I G which is an insignificant design safety factor especially in light of the questionable nature of predicting failure pressures by mathematical models and not actual test results.

38. Failure to use proper construction techniques in placement of reinforced concrete especially in the reactor containment vessels is well documented in various reports in "Report on Containment Building Ring Girder Construction and Repair" such as those dated January 19, 1972, July 30, 1971, November 3, 1971, and June 30, 1972. Such reports raise grave doubts on the structural integrity of the containment vessel to withstand the design pressure of

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55 P S I G. Comments such as the sixth paragraph on page 1 Docket 50-289-48 dated January 19, 1972 indicates the lack of confidence even by the design engineers themselves.

39. The petitioner contends that the hydrologic criteria employed in design of flood control dikes is completely inadequate as demonstrated by the recent flood of June, 1972. The design storm discharge at Three Mile Island of 1,100,000 C.F.S. (estimated in excess of a 20,000 year storm) was closely approached at Harrisburg where the flow was estimated at 965,000 C.F.S (and recently re-estimated by a Penn State University Hydrologist, to be only 100 year frequency flood). It is contended that required figures for the design storm need to be drastically revised upward with a corresponding increase in dike height to adequately protect the plant from flooding. It is further contended that the placement of a major energy source in such a vulnerable position will compound the magnitude of any future tragedy from severe flooding.

40. It is contended that land use changes within the area and changes in the air composition from air pollution drastically weaken the value of statistically analyzed rainfall and runoff figures.

COMMONWEALTH OF PENNSYLVANIA }
COUNTY OF DAUPHIN }

SS:

Before me, a Notary Public in and for said Commonwealth and County, personally appeared Herbert C. Goldstein, Esquire on behalf of Citizens for a Safe Environment, the petitioner herein, who being duly sworn according to law deposes and says that the facts set forth in the foregoing petition for leave to intervene are true and correct to the best of his knowledge, information and belief.

Herbert C. Goldstein, Esquire

Sworn to and subscribed before me

this 7th day of August

Joseph R. Wolf

NOTARY PUBLIC

My Commission Expires September 4, 1973
Harrisburg, Pa. Dauphin County

1585 008

87-12

UNITED STATES OF AMERICA
ATOMIC ENERGY COMMISSION

In the Matter of)	
)	Docket No. 50-289
METROPOLITAN EDISON COMPANY)	
(Three Mile Island))	

CERTIFICATE OF SERVICE

I hereby certify that copies of PETITION FOR INTERVENTION dated August 7, 1972 in the captioned matter have been served on the following by deposit in the United States mail, first class or air mail, this 9th day of August 1972:

Jay E. Silberg, Esq. .
Shaw, Pittman, Potts & Trowbridge
910 17th Street, N.W.
Washington, D. C. 20006

Joseph Gallo, Esq.
Regulatory Staff Counsel
U. S. Atomic Energy Commission
Washington, D. C. 20545

James H. Tamm
Office of the Secretary of the Commission

cc: Mr. Gallo
V. Wilson
ASLBP
Reg. Files

1585 009

UNITED STATES ATOMIC ENERGY COMMISSION

In the matter of

Metropolitan Edison Company

Docket No. 50-289

Pennsylvania Electric Co.

Jersey Central Power and Light Company

Three Mile Island Nuclear Station

Unit 1

CERTIFICATE OF SERVICE

I hereby certify that the original and 20 copies of the
Petition of Intervention by the Citizens for a Safe Environment
have been sent by United States Mail, First Class, postage pre-
paid, this ____ day of August, 1972, to:

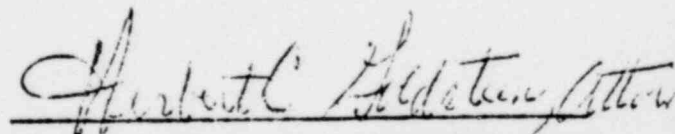
Office of the Secretary
United States Atomic Energy Commission
Washington, D.C. 20545

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