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ENVIRONMENTAL COALITION ON NUCLEAR POWER

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UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

TMI-1

In the Matter of)
METROPOLITAN EDISON COMPANY, et al.)
(Three Mile Island Nuclear Station,)
Unit 1)

Docket No. 50-289

REQUEST TO THE DIRECTOR OF NUCLEAR REACTOR REGULATION, DIRECTOR OF NUCLEAR MATERIAL SAFETY AND SAFEGUARDS, AND DIRECTOR OF THE OFFICE OF INSPECTION AND ENFORCEMENT FOR ACTION BY THE NUCLEAR REGULATORY COMMISSION

Pursuant to Part 2.206(a) of the Rules of the Nuclear Regulatory Commission ("Commission" or "NRC"), the Environmental Coalition on Nuclear Power (ECNP) requests that the Director of Nuclear Reactor Regulation (NRR), the Director of Nuclear Material Safety and Safeguards (NMSS), and the Director, Office of Inspection and Enforcement (OIE), singly or in combination, institute a proceeding pursuant to Part 2.202 of the Commission's Rules to revoke permanently the operating license currently in effect for Three Mile Island Nuclear Station, Unit 1 (TMI-1), Docket No. 50-289, with prejudice against the subsequent reissuance of that license.

This action is requested for a number of reasons which are detailed below, but stems largely from the recent accident at Three Mile Island Nuclear Station, Unit 2 (TMI-2), as well as from various events and circumstances which preceded that accident, and from the results and effects of that accident--results and effects both tangible and less than tangible.

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1. The design of TMI-1 has a series of design defects and deficiencies such that safe, reliable operation of the reactor cannot be assured by the cursory examination afforded in the construction permit and operating license proceedings:

- (a) The plant computer for TMI-1 is old, obsolete, and inadequate to respond appropriately in emergency situations. During the accident at the adjacent TMI-2, the alarm printer on the similar computer at TMI-2 had a delay time of over two and one half hours at one point, and ran more than an hour behind events for over seven hours.¹ This delay cannot be viewed as having adequately served the needs of the operators of TMI-2, and there is no reason to believe that a similar accident situation, with as severe or worse consequences, cannot occur at TMI-1 and be severely aggravated by slow and ambiguous computer alarm printer readings.
- (b) The low volume of primary cooling system water² has the effect of reducing the time available to operators and the plant control systems to apply remedial measures in the event of a loss of coolant accident (LOCA) such as the TMI-2 accident is now admitted to be³. The low water volume design deficiency means that possible operator error and mechanical, electrical, or electronic failure must be minimized so as to prevent either a repeat of the TMI-2 accident, or an even worse accident.
- (c) The electronic signals sent to the control room in many cases record the wrong parameters. For instance, in the case of the Electromatic Relief Valve ("ERV"; the Metropolitan Edison designation is RC-RV2), the signal sent to the control room to indicate a closure of this valve indicates only the electrical energizing of the solenoid which closes the valve, not the actual physical valve closing itself.⁴ This misleading signal aggravated the accident at TMI-2. There is no reasonable assurance that this same problem, or a comparable one, cannot arise many times over at TMI-1.
- (d) The TMI-2 accident showed that many monitoring instruments were of insufficient indicating range to properly warn control-room operators of ambient conditions. For example, the "hot-leg" thermocouples went off-scale at 620°F and stayed off-scale for over 8 hours for reactor coolant loop A and about 13 hours for reactor coolant loop B. A higher temperature limit would have provided important information to the reactor operators. This situation is unchanged at TMI-1. In addition, it is reported that the radiation monitors went off-scale during the TMI-2 accident.⁶ It should be noted here that this eventuality was predicted in 1974 by the TMI-2 intervenors, but dutifully denied by the NRC Staff and Applicant during the TMI-2 licensing hearings. Needless to say, the TMI-2 Licensing Board accepted the assurances of adequate monitoring offered by the Staff and Applicant. Yet a similar situation still exists at TMI-1.

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- (e) The TMI-2 accident included a series of mechanical failures, initiated by a Condensate Pump trip. This single failure caused both main Feedwater Pumps to trip which led to a "feedwater transient." The failure of the ERV complicated the situation, bringing about a "small-break" LOCA.⁷ This kind of an accident at TMI-1, while it has occurred in the real world, is not subject to litigation in a licensing proceeding because it goes beyond the "single-failure criterion" of the Commission's Rules.⁸ Yet in spite of the Commission's Rules, this multiple failure accident occurred, and there is no reason to believe that this accident or any of other combinations of as bad or worse multiple failure accidents cannot occur at TMI-1. Nor is there any assurance that all serious multiple failure--or even all serious single-failure-- accidents have been identified, let alone analyzed and protected against at TMI-1.
- (f) Many vital instruments, instrument controls, and other components in the containment building of TMI-2 lost their ability to operate because they were not considered "safety-related." As examples, the pressurizer level indicators contained components which were not designed to withstand the high radiation levels (reported to be as high as 30,000 R per hour). The failure of these was accelerated by the water environment in the containment building. Similar instruments and control systems apply in Unit-1.
- (g) The TMI-2 accident showed the need for water level instruments inside the reactor pressure vessel, (RPV), as well as instruments to detect steam formation. In addition, this accident demonstrated the need for a vent for hydrogen at the top of the RPV. These deficiencies still exist at TMI-1.
- (h) The exemption for TMI-2 in 1975 from new safety requirements which would have required immediate isolation of the containment structure to prevent the leakage of radioactive gases to the atmosphere also applies to TMI-1.
- (i) The interface between the operator and reactor, the control room panel, is not adequate to provide the appropriate and necessary information to the operators in the event of an accident.

2. The absence of a workable evacuation plan for the area around TMI-1 and 2 almost 5 years after TMI-1 was licensed to operate constitutes a disgraceful confirmation of the intent of the Commission to grant any and all reactor applications tendered, regardless of the quality of the applications or the consequences to the public of that licensing. This public-be-damned attitude ignores the fundamental question as to whether or not it is even possible to carry out evacuations under realistic accident conditions.

The evacuation plans approved in the licensing at TMI-1 and TMI-2 are based upon the assumption that the levels of radiation exposure acceptable to public officials, up to levels that the officials deem necessary to avoid through evacuation, are acceptable to those members of the public at risk. This assumption is unjustified and is unacceptable on the grounds of public health, even ignoring the psychological damage done to those involuntarily subjected to this new form of terrorism, as the TMI-2 accident so vividly demonstrated.

In addition, the assumptions and conclusions concerning emergency preparedness made by the TMI-2 Licensing Board⁹ now are known to be without merit. These erroneous conclusions and assumptions apply equally to TMI-1. The TMI-2 accident demonstrated that a radiological accident is not, and can not be treated, like any other kind of disaster which may require evacuation.

Furthermore, since any efforts at future evacuations will require the assistance of local volunteer firemen who will be just as anxious to leave as the general public, there is no assurance whatsoever that enough of these requisite individuals will stay behind, separated from their families, to assist in evacuation maneuvers.

3. The unconscionably lax attitude of the management of Metropolitan Edison, which led to the wholesale rush to get TMI-2 into commercial operation, in spite of repeated serious mechanical malfunctions. It is the same management which permitted the lax conditions in the TMI-2 control room that allowed TMI-2 to operate with both auxiliary feedwater pumps turned off, a serious violation of the Technical Specifications for TMI-2. It is this same lax management attitude which almost permitted TMI-1 to begin operation on March 27, 1979, with one of these same auxiliary feedwater pumps turned off. It is this same management that has operated TMI-1 since 1974 and still has only a relatively weak engineering capability.¹⁰

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4. There is yet little indication that the TMI-2 accident is even understood by the NRC, Metropolitan Edison, or Babcock and Wilcox. In particular, there does not seem to have been released a discussion of during what time periods after the accident the fuel was damaged. Nor has there appeared an assessment of what could have been the range of consequences if

- (a) the reactor operators had been less skillful than they were in handling the accident (i.e., what if they had been more prone to panic, and had made even more serious errors).
- (b) the accident had taken place in a reactor with a full inventory of fission products.
- (c) the accident had required an evacuation of the site, due to on-site contamination, at a reactor with spent fuel being stored on-site, either normally or in a compacted configuration.
- (d) there had been a core meltdown on, say, March 30, 1979.

5. According to sworn testimony by Mr. Thomas M. Gerusky, Director of the Bureau of Radiological Protection of the Commonwealth of Pennsylvania, before the U.S. Congressional Committee on Licensing and Technology, Subcommittee on Natural Resources and the Environment on June 2, 1979, about fifteen (15) curies of Iodine-131 were released to the environment in the first month after the TMI-2 accident. In the Final Supplement to the Final Environmental Statement for TMI-2, it was estimated that about 0.01 curies of this isotope would be leased during a year of normal operation. The fifteen curies, then, represents a release of 1500 times that for one year of normal operation, and 50 times more than the plant was expected to emit in its entire 30 year operating lifetime. As a result, any additional releases, due to even the normal operation of TMI-1, if normal operation is ever possible, would be far beyond those which the residents of this area were promised.

Similar considerations apply to the emissions of the radioactive noble gases released during the TMI-2 accident. In addition, many of the residents of the vicinity, already severely victimized by Metropolitan Edison in the TMI-2 accident, now face the continuing threat of releases of radioactively

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contaminated water into the Susquehanna River. These residents may now be placed in the position of having to drink, wash in, cook with, and being unable to prevent their children from consuming water containing radioactive contamination from TMI-2. These residents of the Susquehanna Valley (including members of ECNP) will thus be exposed to radiation for which they receive no commensurate benefit, radiation that was not expected to be released.

6. Many residents of central Pennsylvania were thoroughly and completely terrorized by the March 28, 1979 accident at TMI-2. This terror has turned the lives of many otherwise happy people into a living nightmare, because they know the accident at TMI-2 is not over, and that unannounced releases of radioactive materials continue. In addition, Metropolitan Edison now proposes to rush TMI-1 into operation. This rash and cruel act will have the effect of increasing the level of fear, terror, and bitter resentment among many residents of that beleaguered area. Already, threats of violence have been made concerning the proposed operation of TMI-1.¹¹

Metropolitan Edison has created a climate where people know that they no longer are safe in their own homes, they are afraid to grow food in their own gardens, and many will soon have reason to distrust the very water they drink. They have learned the utter contempt that Metropolitan Edison holds for their feelings and their health and safety.

One certain result of the reopening of TMI-1 will be a substantial increase in the tension in the area surrounding TMI-1. The outward manifestation of this tension may well appear as increased suicide rates, divorce rates, incidences of child beating, a general lowering of the general mental health of the populace, quite probably, acts of civil disobedience against TMI-1 and possible acts of violence, even sabotage against

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TMI-1.¹² A good example of the psychological impact of the TMI-2 accident upon the residents of central Pennsylvania is afforded by the appended editorial.¹³

An additional dimension of the psychic and fiscal damage wreaked by the TMI-2 accident is found in its economic effects on the region. Start-up of TMI-1 will only exacerbate the fears and uncertainties of persons who already avoid the purchase of agricultural and manufactural products from this area. Effects on property values and saleability of land and buildings in the area is presently under investigation.

The slipshod and lackadaisical attitude of Metropolitan Edison toward safety and security at TMI has turned the entire facility into a public nuisance and menace whose operation and even existence can no longer be tolerated. This is especially true, since there can be no believable assurances offered that more or even worse accidents will not happen in the future, if TMI-1 or-2 ever operates again.

Under the Atomic Energy Act of 1954, (AEA) as amended, the purpose of the atomic energy program is to promote the use of nuclear energy

for peaceful purposes to the maximum extent consistent with the common defense and security and with the health and safety of the public. (AEA, Sec 3(d).)

This concept was recently given unanimous support by the Supreme Court (Vermont Yankee Nuclear Power Corporation v. Natural Resources Defense Council, et al., April 3, 1978, Slip opinion, p. 28)

The Commission's prime area of concern in the licensing context...[is]...public health and safety.

The intent of Congress has thus been upheld by the Supreme Court in determining that the highest duty of the NRC is to protect the health and safety of the public from the possible misuses of atomic energy.

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There is no language in the AEA or any other legislation under which the Commission operates that authorizes the Commission to terrorize, traumatize, and otherwise substantially decrease the level of the mental health, the welfare, and well-being of a large body of individuals.

Nor does the AEA confer upon any licensee under Sec. 103 any rights to a license just because a facility is built. In fact, Sec. 103 specifically states that the

Commission shall issue...licenses...to persons who are equipped to observe and who agree to observe such safety standards to protect the health and to minimize the danger to life or property as the Commission may by rule establish (AEA, Sec. 103(b)).

Metropolitan Edison has created an atmosphere where the actual operators of TMI-1 and 2, as noted above, had little regard for the rules of the Commission or the terms of the operating license granted under Sec. 103 of the AEC.

Under the AEA, the Commission has the legal authority to revoke the operating license of TMI-1 under Sec. 106 of the AEA.

The climate of fear, distrust, and, indeed, hatred that Metropolitan Edison has so effectively cultivated over the years, culminating with the TMI-2 accident and its resulting traumatic effects, has created a dangerous situation which may spur particularly angry or upset people, singly or in groups, to various kinds of sabotage against Metropolitan Edison. While the vast majority of such acts may be of no public health consequence, the Commission must take into consideration the fact that sabotage is probably far more probable at TMI-1 or-2 than at any other nuclear facility in the world.

Merely upgrading police protection of the TMI facility would duck the answer. The continuing problem is not with the angry and emotionally disturbed people of Central Pennsylvania; they are responding in perfectly normal ways to what they perceive as a threat to their lives and properties, and that threat is TMI, Units 1 and 2. The public health and safety cannot

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be protected by permitting the operation of TMI-1. Such an act would be an insult to all who were so deeply hurt by the TMI-2 accident. The only way to restore the mental health and safety of this area is to close TMI forever. The restoration of health and safety of the public, both mental and physical, is far more important and valuable than any conceivable quantity of electricity or financial benefits to be derived from any operation of TMI 1 or 2.

Therefore, ECNP requests that the Directors of NRR, NRCSS, and OIE, singly, or in any combination, institute immediately a show-cause proceeding under Part 2.202 of the Commission's rules to revoke permanently the operating license for TMI-1.

Respectfully submitted

Dated this 23rd day
of June, 1979.

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References

1. Preliminary Annotated Sequence of Events, March 28, 1979, Rev. 0, dated May 10, 1979.
2. Final Safety Analysis Report, TMI-2, Table 1.3-1.
3. See ref. 1, page 2.
4. Ref. 1, page 4.
5. Ref. 1, Figures 22 and 27.
6. Statement of Erich W. Bretthauer, Director, Monitoring Operations Division, Environmental Protection Agency, Las Vegas, Nevada, before the U.S. Congressional House Subcommittee on Science and Technology, Elizabethtown, Pa., June 2, 1979.
7. Ref. 1, p.2.
8. See Special Prehearing Conference Order, LBP-79-6, March 6, 1979, Docket Nos. 50-387, 388, page 70.
9. Initial Decision, TMI-2, December 20, 1977, para. 58-67.
10. Transcript of the Closed Session of the NRC Commissioner's Meeting, Friday, March 30, 1979, page 166.
11. The Paxton Herald, c. June 12-13, 1979.
12. Ibid.
13. Paxton Herald, June, 1979.

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