

UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

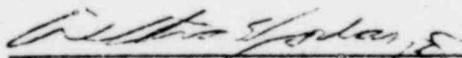
BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of )  
 )  
METROPOLITAN EDISON COMPANY, )  
 et al., ) Docket No. 50-289  
(Three Mile Island Nuclear ) (Restart)  
 Station, Unit No. 1 )

PEOPLE AGAINST NUCLEAR ENERGY  
SUPPLEMENTAL PETITION TO INTERVENE

Fursuant to the Board's Order of September 21, 1979, People Against Nuclear Energy (PANE) submits this Supplement Petition to Intervene. Its purpose is to inform the Board and the parties that PANE has not changed its contentions since they were originally submitted. Accordingly, PANE's final contentions are contained in its Draft Contentions filed with the Board on October 5, 1979.

Respectfully submitted,

  
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DATED: October 22, 1979

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UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

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

PEOPLE AGAINST NUCLEAR ENERGY BRIEF IN SUPPORT  
OF PSYCHOLOGICAL DISTRESS CONTENTIONS

On March 28, 1979, the worst accident in the history of commercial nuclear power in the United States occurred at Three Mile Island (TMI) Unit No. 2. Over a period of several days, radioactive gasses were released into the atmosphere, and it appeared that either a hydrogen explosion or a core meltdown were distinct possibilities, either of which could have resulted in the exposure of thousands of residents of the TMI area to lethal radiation doses and the contamination of enormous land areas. People fled from Middletown and other local communities by the thousands. Fortunately, an unthinkable disaster was averted. People returned to their homes, some only after several weeks, but their lives had changed. As a direct result of the accident, they now suffer from recognizable psychological disorders. Even today they suffer additional trauma each time they hear the siren at the plant or hear of another unscheduled re-

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lease of radiation. If TMI Unit 1 is allowed to reopen, that trauma will be further compounded and made permanent. In addition, the original accident and the prospect of renewed operation of TMI Unit 1 threaten the very existence of the communities in the vicinity of the reactor. At stake in this proceeding is the question of whether the individual victims will be allowed to recover and their communities to retain their vitality.

The plain language of the Atomic Energy Act (AEA) requires that the Nuclear Regulatory Commission consider these threats to individual and community health in order to fulfill its responsibility to protect the health and safety of the public. The National Environmental Policy Act (NEPA) also requires consideration of these distinct measureable health impacts, and in addition, it mandates that the Commission address the broader social and economic impacts of renewed operation TMI Unit 1 on the surrounding community.

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I. The Atomic Energy Act Requires That the NRC Consider PANE's Contentions.

A. The Plain Language of the AEA Requires that the NRC Consider the Harm to Psychological Health That Would be Caused by Renewed Operation of TMI Unit 1.

PANE contends that renewed operation of TMI Unit 1 would cause severe psychological harm to individuals and to the surrounding community. Expressed in the language of the Atomic Energy Act, reopening TMI Unit 1 would be "inimical...to the health and safety of the public." 42 USC 2133(d). The plain meaning of this language encompasses the psychological harm that PANE has alleged.

By itself, the word "health" is commonly understood to include psychological as well as physical well being. Webster's Third International Dictionary defines "health" as "the state of being sound in body or mind." (Emphasis added.) In United States v. Vuitch 402 U.S. 62 (1971), the Supreme Court accepted just that definition in ruling on the scope of a District of Columbia statute prohibiting abortions "unless the same were done as necessary for the preservation of the mother's life or health." Id. at 68. The Court approved an earlier District Court decision holding that the statute permitted abortions for mental health reasons, Doe v. General Hospital of the District of Columbia, 313 F. Supp. 1170 (D.D.C. 1970), stating,

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We see no reason why this interpretation of the statute should not be followed. Certainly this construction accords with the general usage and modern understanding of the word "health," which includes psychological as well as physical well being.

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402 U.S. at 72. Two years later, the Supreme Court interpreted the meaning of "health" in a Georgia abortion statute:

We agree with the District Court, 319 F. Supp. at 1058, that the medical judgment may be exercised in light of all relevant factors--physical, emotional, psychological, familial, and the woman's age--relevant to the well-being of the patient. All these factors may relate to health.

Doe v. Bolton, 410 U.S. 179, 192 (1973) (Emphasis added.)

Although the Court in Vuitch referred to its reading of "health" as consistent with "modern understanding," this reading has by no means been limited to recent years. One of the most frequently cited cases in the area is Venable v. Gulf Taxi Line, 105 W. Va. 156, 141 S.E. 622 (1928). In this action for personal injuries resulting from an automobile accident, the Court stated that health means the "state of being hale, sound, or whole in body, mind, or soul, well being." 141 S.E. at 624. Citing Venable, the New Hampshire Supreme Court went so far as to hold that the term "serious bodily injury" includes psychological injury because it embraces any impairment to health. State v. Goodwin, 395 A. 2d 1234, 1238 (N.H. 1978). Finally, in the context of zoning legislation, a New York appellate court held that the term "health related facility" included a facility for the care of the mentally retarded as well as those suffering physical ailments. Little Neck Community Association v. Working Organization for Retarded Children, 52 A.D.2d 90, 383 NYS 2d 364 (1976).

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Interpreting the term "health and safety of the public" to include psychological health is consistent with the legislative history of the AEA and with principles of statutory construction. The Senate Report accompanying the original legislation enacted in 1946 explained that §12 of the Act was intended to require the Commission to:

establish safety and health regulations for the possession and use of fissionable and byproduct materials to minimize the danger from explosion, radioactivity and other harmful or toxic effects incident to the presence of such materials.

S. Rep. No. 1211, U.S. Code Cong. Service, 79th Cong., 2d Sess. 1946, at 1335. (Emphasis supplied.) Although the most commonly envisioned hazards of the use of atomic energy would be physical, or "toxic," effects, the hazard at issue here falls within the realm of "other harmful effects." This language arguably requires specific consideration of psychological hazards. At a minimum, it establishes that the Commission must take a broad view of its responsibilities to protect the public health and safety.<sup>1/</sup> This is consistent

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<sup>1/</sup> The First Circuit took a somewhat narrow view in State of New Hampshire v. Atomic Energy Commission, 406 F. 2d 170 (1st Cir. 1960), in holding that the Commission's responsibilities extended only to the "special hazards of radioactivity," and not to thermal pollution that would result from plant operation. That case has been superceded, however, since NEPA now requires the Commission to condition nuclear plant licenses so as to minimize or avoid environmental effects such as thermal pollution, Calvert Cliff's Coordinating Committee v. AEC 449 F. 2d 1109, 1128 (1971), and to interpret the AEA and NEPA in pari materia so as to take non-radiological effects into account. Public Service Co. of New Hampshire v. U.S. N.R.C., 582 F. 2d 77, 86 (1978). Even if the First

with the principle that statutes enacted to protect the public health must be liberally construed. Cf., U.S. v. Lee, 131 F. 2d 464 (7th Cir. 1942), in which the Court held that the Federal Food, Drug, and Cosmetic Act "was enacted to protect the public health and to prevent fraud and ought to be given a liberal construction." Id. at 466. Accord, United States v. 62 Packages, More or Less, of Marmola Prescription Tablets, 48 F. Supp. 878 (W.D. Wis. 1943).

Under these precedents and authorities, including particularly those of the United States Supreme Court, the term "health and safety of the public" encompasses the psychological health of PANE's members, their neighbors, and their community. It is important to note here that PANE does not contend that people are simply worried or concerned. The contention is that people have been traumatized in a manner that can be medically diagnosed and that their trauma will be compounded and made permanent by reopening TMI Unit 1. The Atomic Energy Act requires that the Commission determine that the operation of TMI Unit 1 will not be inimical to the psychological health of the people and the communities in the vicinity of the reactor.

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Circuit's interpretation remained valid, however, the NRC would be required to consider PANE's contentions. The health effect here is not of the sort that could accompany a coal fired generating plant or similar major industrial activity other than nuclear power. This psychological trauma is directly related to the radiological accident that occurred at TMI Unit 2 and to the threat of radiation releases and a major accident in the renewed operation of TMI Unit 1. It is the colorless, odorless threat of radiation that could cause genetic damage and whose health effects may not be known for decades to come.

- B. The Common Law Recognizes that Protection of an Individual's Health and Well Being From Harm Extends to Psychological Harm and that Medical Science and the Courts Are Capable of Determining Whether Psychological Harm Exists.

The courts have consistently interpreted the word "health" as used in various statutes to include psychological or mental health. Recognizing the validity of the concept of psychological harm and the increasing ability of medical science to quantify the harm to particular individuals, the courts have also accepted the principle that health and well being include psychological health as a matter of common law.

The development of the common law concerning psychological harm has come primarily in tort litigation in which plaintiffs have sought compensation for mental injury, either as a single claim or in connection with claims for physical injuries. Although the acceptance of discrete mental distress claims has become widespread only in the last decade, in 1960 a Federal District Court, applying Virginia law, stated,

[I]t is unreal to attempt to distinguish between mental and physical injury. An affront to either the mental or the physical sensibilities is an affront to the personal being.

Penick v. Mirro, 189 F. Supp. 947, 949 (E.D. Va. 1960)

(Emphasis supplied.) That language, under which psychological harm would be cognizable regardless of real or potential physical harm, was actually broader than necessary for the

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resolution of the case, which involved the plaintiff's severe adverse reaction to an incident in which an automobile, while not harming her physically, had destroyed a wall of her house while she was in the room. Factually, this case can be grouped with those in which recovery is allowed for psychological distress because the plaintiff was within the zone of physical danger. This represents the third stage in the development of tort law in this area, the first having been that plaintiffs could recover for psychological harm only if they had also suffered physical injury, and the second that there must at least be a physical manifestation of the psychic injury in order to establish a cause of action. Although there remains much variation in the manner in which the law is stated, it is now clear that we have come to a fourth stage in which plaintiffs may recover for negligently caused psychological injury regardless of the existence of real or potential physical harm. Note - "Torts - Expanding the Concept of Recovery for Mental and Emotional Injury," 76 W. Va. L. Rev. 176, (1974).

Although the commentator just cited complained that West Virginia had not kept pace with the trend toward allowing recovery for negligently caused mental injuries, Id. at 176, in the same year, a Federal District Court applying West Virginia law held that thirty-three plaintiffs had a cause of action for mental distress damages as the result of the Buffalo Creek flood disaster despite the fact that they had not been present when the disaster occurred. The case

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represented a clear rejection of any need to show a physical injury or even potential for physical injury in order to recover. Prince v. Pittston Company, 63 F.R.D. 28 (S.D.W.Va. 1974). Accord, Alsteen v. Gehl, 21 Wis. 2d 349, 124 N.W. 2d 312 (1963) (damages for emotional distress recoverable if caused by extreme and outrageous conduct.)

It now appears that the courts are accepting the premise that recovery may be had for negligent infliction of mental distress under the classical foreseeability rule common to other types of harm. For example, in Dillon v. Legg, 69 Cal. Rptr. 72, 68 Cal. 2d 728, 441 P. 2d 912 (1968), the California Supreme Court rejected the zone of danger rule where a mother suffered mental anguish as the result of seeing her daughter killed by an automobile. Instead, the Court ruled that the mother's presence and reaction were foreseeable, and that recovery would be allowed despite possible difficulties in administering the legal principle. To the same effect are Montinieri v. Southern New England Telephone Co., 175 Conn. 337, \_\_\_\_\_ N.E. 2d \_\_\_\_\_, 47 L.W. 2030 (1978) (recovery possible if unreasonable risk of causing emotional distress is foreseeable); D'Ambra v. United States, 345 F. Supp. 810 (D.R.I. 1973), cert. denied, 414 U.S. 1075 (1973) (there is a cause of action for foreseeable psychological consequences to parent of seeing infant son killed by mail truck). Without specifically discussing the foreseeability rule, courts have also found a cause of action for mental injury caused by negligent misrepresentation,

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Vance v. Vance, 47 L.W. 2463 (Md. Ct. Spec. App., Jan. 11, 1979) (wife sues husband for psychological distress caused by his having failed to inform her that divorce from previous wife was not final when he married plaintiff twenty years earlier), and by negligence in failing to test the fetus of a thirty-eight year old woman for possible defects or retardation prior to the birth of a mongoloid child. Berman v. Allan, 48 L.W. 2026 (N.J. Sup. Ct., June 26, 1979).

The State of Pennsylvania, the home of PANE's members and the Three Mile Island reactor, has recently accepted the liberal "forseeability" rule and has firmly rejected the outdated arguments that once restricted consideration of mental injury. In Sinn v. Burd, 48 L.W. 2080 (Pa. Sup. Ct., July 11, 1979), the Pennsylvania Supreme Court found a cause of action where a mother suffered grievous mental pain as the result of seeing her daughter killed by an automobile, although the mother was near the front door of her home and not within the zone of physical danger. In reaching this conclusion, the Court expressed confidence in the ability of science to address psychic injury:

Advancement in modern science leads us to conclude that psychic injury is capable of being proven despite the absence of a physical manifestation of such injury. Although some courts permit recovery for emotional distress only where the plaintiff can prove that psychic injury caused physical damage as well, this requirement is another synthetic device to guarantee the genuineness of the claim.

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Id. at 2080. Certainly the Commission should be particularly sensitive to PANE's allegation of psychological harm where the Pennsylvania courts have recognized the validity of both the legal claim for psychic injury and the scientific basis for the claim.

The increased confidence in the ability of science to discern and measure psychological injury has eliminated a major concern that once hindered the development of the law in this area--the concern that psychic injuries may be too vague or subjective in nature to be subject to a damage claim, and in particular, that individuals may file false or fraudulent claims if a cause of action is allowed. In response, one commentator has stated,

Although many types of physiological and functional changes may follow crisis or shock, development in medical technology has made it increasingly easier to establish and prove the direct manifestations of psychological injuries. Expert medical testimony should be sufficient to dispell any questions as to the genuineness of the plaintiff's claim.

76 W. Va. L. Rev., supra, at 188. Similarly, the Wisconsin Court in Alsteen v. Gehl, supra, stated,

Psychiatry and clinical psychology, while not exact sciences, can provide sufficiently reliable information relating to the causal relationship between the injury and the defendant's conduct, to enable a trier of fact to make intelligent evaluative judgments on a plaintiff's claim.

124 N.W. 2d at 312, and the D'Ambra court noted that

The danger of fraudulent claim argument is even less tenable today since medical proof of psychic injuries is now availa-

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ble. Comment: Negligently Inflicted  
Mental Distress: The Case for an Inde-  
pendent Tort, 59 Geo. L. Rev. 1237, 1259  
(1970-71)

354 F. Supp. at 818.

With respect to the case at hand, these authorities establish that PANE's members would have a cause of action in tort for mental distress damages under any of the accepted rules. First, as the contentions state, PANE's members have suffered physical manifestations of their psychological injury. Second, they are clearly within the zone of danger of an accident at Three Mile Island. Third, it is foreseeable that anyone who may be exposed to radiation as the result of an accident would suffer psychological harm even if there was no actual radiation exposure. Here, of course, PANE's members and others actually were actually exposed to radiation leakage during and after the accident and would not have to rely on the developing liberal approach. Finally, PANE's psychological distress claims are both verifiable and measurable under the techniques of modern medical science.

The discussion above establishes that the law recognizes the validity of mental distress claims and the ability of medical science to provide adequate evidence for legal decisions when these claims are presented to the courts. By itself, this is enough to require the Commission to consider PANE's contentions. In addition, however, the available information establishes that there is a recognized diagnosis for exactly the type of psychological distress claim that PANE is now asserting. The diagnosable condition of "post-

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traumatic stress disorder" has now been recognized and included in the most recent draft of the Diagnostic and Statistical Manual of Mental Disorders published by the American Psychiatric Association (DSM-III).<sup>2/</sup> Although PANE's psychological distress contention is not limited to this disorder, the condition is among those that have been caused by the accident at TMI Unit 2 and that would be compounded by renewed operation of Unit 1. The background of this development is discussed in Comment - "Neurosis Following Trauma: A Dark Horse in the Field of Mental Disturbance," Cumberland L. Rev. 495 (1977), which was published before the American Psychiatric Association accepted the specific diagnosis of post-traumatic stress disorder. The relevant discussion from the DSM-III is attached as Exhibit 1. It is important to note that the DSM-III specifically states that, "Some evidence indicates that the disorder is more severe and long-lasting when the stressor is of human origin." DSM-III at N:1. There is now no question that medical science recognizes the type of psychological distress from which PANE's members are suffering and that the state of the art of stress psychology is such that the Commission can evaluate PANE's claims in this proceeding.

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<sup>2/</sup> This draft of the third edition of the DSM is dated January 15, 1978. We have been informed that the final version of DSM-III will be available in January 1980.

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II. The National Environmental Policy Act Requires that the NRC Consider the Impact of Renewed Operation of TMI Unit 1 on Human and Community Health

"The sweep of NEPA is extraordinarily broad, compelling consideration of any and all types of environmental impact of federal action." Thus did the Court of Appeals for the District of Columbia characterize both the range of environmental impacts that this Commission must consider before it takes any action, and the broad manner in which the National Environmental Policy Act must be interpreted to achieve its goal of a safe, healthful, and pleasing environment.

Calvert Cliffs' Coordinating Committee v. U.S.A.E.C., 449 F. 2d 1109, 1122 (D.C. Cir. 1971), 42 U.S.C. 4331(b)(2).

That range of impacts extends to the severe harm to human psychological health that has already been caused by the accident at TMI Unit 2, and that would be compounded, complicated, and made permanent by the renewed operation of TMI Unit 1. It also extends to the serious threat to the stability, integrity, and vitality of the communities in the vicinity of the reactor that would be posed by the restart of TMI Unit 1.

The specific language of NEPA itself establishes that the Commission must take into account the full range of possible impacts of any Federal action on the human environment. In Section 101, Congress recognized "the critical importance of restoring and maintaining environmental quality to the overall welfare and development of man," and declared it

national policy "to use all practicable means and measures...to create and maintain conditions under which man and nature can exist in productive harmony, and fulfill the social, economic, and other requirements of future generations of Americans." 42 U.S.C. 4331(a). The Federal government is to use all practicable means to assure "safe, healthful, productive, and esthetically and culturally pleasing surroundings" for all Americans, and to "attain the widest range of beneficial uses of the environment without degradation, risk to health or safety, or other undesirable and unintended consequences." 42 U.S.C. 4331(b)(2) and (3).

At §102, Congress established several independent requirements that all Federal agencies must meet in order to fulfill these responsibilities. The most well known is the requirement for the preparation of an environmental impact statement for every "major federal action significantly affecting the quality of the human environment." 42 U.S.C. 4332(2)(C). However, the Act also requires that all Federal agencies "utilize a systematic, interdisciplinary approach which will insure the integrated use of the natural and social sciences and the environmental design arts" in reaching any decisions, 42 U.S.C. 4332 (2)(A), and that they develop methods and procedures to assure that "unquantified environmental amenities and values are given appropriate consideration." 42 U.S.C. 4332 (2)(B).

The legislative history of NEPA establishes that Congress intended Federal agencies to address psychological and

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community health issues such as those raised by PANE. Senator Jackson, the primary sponsor of this legislation in the Senate, included psychological well being in a catalogue of the conditions to which NEPA was addressed:

Haphazard urban and suburban growth; crowding, congestion, and conditions which result in civil unrest and detract from man's social and psychological well being; critical air and water pollution problems; diminished recreational opportunity; continuing soil erosion...."

115 Cong. Rec. 40417 (1969) (remarks of Senator Jackson). (Emphasis supplied.) The Senate Report expressed a similar concern with the social and psychological aspects of the human environment:

Each individual should be assured of safe, healthful, and productive surroundings in which to work and should be afforded the maximum possible opportunity to derive physical, esthetic, and cultural satisfaction from his environs.

S. Rep. No. 91-296, 91st Cong., 1st Sess. 18 (1969).

The courts have recognized that the scope of NEPA extends to psychological and community health impacts and have required Federal agencies to consider those issues. The leading case is Hanley v. Mitchell, 460 F. 2d 640 (2d Cir. 1972), cert. denied, 409 U.S. 990 (1972) (Hanley I), in which the Court of Appeals for the Second Circuit addressed the question of whether the General Services Administration had adequately considered the environmental impacts of a proposed office building-jail complex to be located in a residential area in Manhattan. The Court held that GSA had

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not complied with NEPA because it had failed to consider the unique impacts of locating a jail in a residential area:

The National Environmental Policy Act contains no exhaustive list of so-called environmental considerations," but without question its aims extend beyond sewage and garbage and even beyond water and air pollution. (citations omitted) The Act must be construed to include protection of the quality of life for city residents. Noise, traffic, overburdened mass transportation systems, crime, congestion and even availability of drugs all affect the urban "environment" and are surely results of the "profound influences of...high density urbanization [and] industrial expansion." Section 101(a) of the Act. 42 U.S.C. §4331(a). Thus, plaintiffs do raise many "environmental considerations" that should not be ignored.

Id. at 647.

Hanley I was followed by Hanley v. Kleindienst, 471 F. 2d 823 (2d. Cir. 1972), cert. denied, 412 U.S. 908 (1973), appeal after remand, 484 F. 2d 448, cert. denied, 416 U.S. 936 (1974) (Hanley II), in which the Second Circuit again found that GSA's consideration of the jail had been inadequate because it had failed to deal with a possible increase in crime that could result, or with the impact of a drug maintenance program that would be located at the facility. In so doing, the Court expressed some doubt concerning NEPA's coverage of alleged psychological effects:

For the most part their [the local residents] opposition is based upon a psychological distaste for having a jail located so close to residential apartments, which is understandable enough. It is doubtful whether psychological and sociological effects upon neighbors constitute the type of factors that may

be considered in making such a determination since they do not lend themselves to measurement.

Id. at 833. Despite the fact that this discussion was dicta and that the court expressly stated that it did not have to decide the issue, Judge Friendly issued a strong dissent on this point, noting that he could see no ground for doubt as to whether the effects should be considered, and citing the broad language of the statute to support a conclusion that they must be. Id. at 839 (Friendly, dissenting).<sup>3/</sup>

The Second Circuit has now resolved the doubts that it expressed in Hanley II. In Chelsea Neighborhood Association v. United States Postal Service, 516 F. 2d 378 (2d Cir. 1975), the Court emphasized the need to consider what can only be termed the "psychological effects" of a plan to construct a housing project on top of a postal facility:

A possibly more serious shortcoming of the housing analysis lies in the social not physical, sciences. What effect will living at the top of an 80-foot plateau have on the residents of the air-rights housing? Will there be an emotional as well as physical isolation

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<sup>3/</sup> The majority's doubts in Hanley II have been cited in dicta in another case involving the location of a jail and a garage, First National Bank of Chicago v. Richardson, 484 F. 2d 1369, 1380, n. 13 (7th Cir. 1973), and in a case involving esthetic appearance of a bulk mail facility, Maryland National Capital Park & Planning Commission V. U.S. Postal Service, 487 F. 2d 1029, 1038 (D.C. Cir. 1973). Both cases involved concerns about the measurability of the alleged impacts, not the applicability of NEPA to the impacts, if they are measurable.

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from the community? Will that isolation exacerbate the predicted rise in crime due to the increase in population density? That an EIS must consider these human factors is well established. Hanly v. Mitchell 460 F. 2d 640,647 (2d Cir.), cert, denied, 409 U.S. 990, 93 S. Ct. 313, 34 L. Ed. 2d 256 (1972). The EIS gives scant attention to these serious questions. It acknowledges that "project size, height and design and the incidence of crime" are all related. EIS at III-31. But the only response is to suggest that "[p]roject design should reflect this emerging body of research to the extent practicable." Id. This is not enough. We do not know whether informed social scientists would conclude that the top of the VMF would likely become a human jungle, unsafe at night and unappealing during the day. The question must be faced, however, by those who plan the project.

Id. at 388. The import of this decision is obvious. If the possibility of emotional isolation--a psychological effect--must be considered with respect to a proposed housing project, the possibility of severe damage to psychological and community health must be considered here.

Although Chelsea Neighborhood Association, supra, has now established that psychological impacts must be addressed by the Commission, PANE's contentions are cognizable even under the restrictive approach taken by the Hanley II Court. PANE does not contend that residents of the TMI area are simply uncomfortable or worried about the renewed operation of TMI Unit 1. This reactor is more than an undesirable neighbor. Rather, PANE contends that people are already suffering identifiable psychological harm as a result of the original accident, and that specific harm will continue and be compounded by renewed operation of TMI Unit 1.

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Furthermore, there is no question that the effects alleged by PANE are measurable. PANE has demonstrated this point at substantial length above at pages 10 - 12. Indeed, as one commentator has stated,

[A] diagnosis of posttraumatic neurosis can be made with reasonable medical certainty. Although psychiatric findings may not be altogether tangible in nature, "they are just as objective, if not more so, than many material findings in physical illness." The psychologist conducts certain quantitative tests on the patient which have been standardized by using thousands of known cases. Thus, objective interpretations are possible by comparing the patient's responses to the typical responses of many other persons previously tested.

76 W. Va. L. Rev., supra, at 192 (Emphasis supplied). Since the psychological effects alleged by PANE are measurable, they must be considered by the Commission.

Just as the Second Circuit required the Postal Service to examine the impact on individual psychological health of living in a particular type of housing project, it has required Federal agencies to consider the impact on the health of the community as well. In Trinity Episcopal Corp. v. Romney, 523 F. 2d 88 (2d Cir. 1975), for example, the Court recognized that decay and blight, neighborhood stability, and implications for city growth policy are among the issues that the Department of Housing and Urban Development must address under NEPA in considering the construction of a housing project. Similarly, in City of Rochester v. United

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States Postal Service, 541 F. 2d 967 (2d Cir. 1976), the Court, faced with a proposal to move a large facility from downtown Rochester, held that the Postal Service had to consider two environmental effects similar to those alleged by PANE: (1) the possibility of ultimate "economic and physical deterioration in the downtown Rochester Community," and (2) the fact that the move might "contribute to an atmosphere of urban decay and blight, making environmental repair of the surrounding area difficult if not infeasible." Id. at 973.

Based on these authorities, the Commission must consider the impact of reopening TMI Unit 1 on the surrounding communities. In fact, under both NEPA's general requirements at 42 U.S.C. 4332 (2)(A) and (B), and its specific environmental impact requirement at 42 U.S.C. 4332 (2)(C), the Commission is required to take the initiative to meet its affirmative duty to evaluate these impacts before the hearings and regardless of whether other parties present relevant evidence.

Harlem Valley Transportation Association v. Stafford, 500 F. 2d 328, 336 (2d Cir. 1974), Calvert Cliff's Coordinating Committee v. AEC, supra.

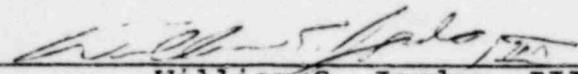
#### CONCLUSION

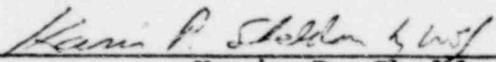
For the foregoing reasons, PANE urges that the Licensing Board and the Commission accept its first and second contentions alleging harm to psychological and community health from the restart of TMI Unit 1.

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Respectfully submitte

  
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Dated: *Oct. 22, 1979*

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**REACTIVE DISORDERS NOT ELSEWHERE CLASSIFIED**

The essential feature is a mental disorder that does not meet the criteria for any of the specific disorders previously classified which is judged to be a reaction to one or more life events or circumstances, without which the disorder would not have occurred. (It should be noted that frequently many of the previous disorders, such as the Affective Disorders, may also be judged to be reactive.) The stressor may be prolonged or brief, and its severity should be noted on Axis IV. All of the Reactive Disorders may be prolonged or brief depending upon the duration of the stressor, the personality characteristics of the individual, and the environmental support systems which are available.

These disorders include Post-traumatic Stress Disorder and Adjustment Disorders.

**Post-traumatic Stress Disorder**

The essential feature is the development of characteristic symptoms after the experiencing of a psychologically traumatic event or events outside the range of human experience usually considered to be normal.

The characteristic symptoms involve reexperiencing the traumatic event, numbing of responsiveness to, or involvement with the external world, and a variety of other autonomic, dysphoric or cognitive symptoms.

As defined here, the stressor producing this syndrome must be of sufficient magnitude that it would be expected to produce significant symptoms of distress in most individuals, and is also outside the range of such common normal human experiences as simple bereavement, chronic illness, business losses, or marital conflict. Many different types of traumatic events have been noted to produce this syndrome. The trauma may be experienced alone, as in the case of rape or assault, or experienced in the company of groups of people, as in the case of military combat. In addition, a variety of mass catastrophes have been identified as stressors. These may be natural disasters (floods, earthquakes), accidental man-made disasters (car accidents, airplane crashes, large fires), or deliberate man-made disasters (atomic bombing, torture, ambush, death camps). The stressor always involves a psychological component, although frequently there is a concomitant physical component which may even involve direct damage to the central nervous system. Some evidence indicates that the disorder is more severe and longer lasting when the stressor is of human origin. The severity of the stressor should be noted on Axis IV and the specific stressor noted.

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The reexperiencing of the traumatic event may occur in a variety of ways. Some individuals have recurrent painful and intrusive recollections of the event or recurrent dreams or nightmares during which the event is reexperienced. Some individuals have dissociative-like states, lasting from a few minutes to several hours or even days, during which components of the event are relived and the individual reacts behaviorally to the events he is reliving, as though experiencing them at that very moment. Such states have been reported as common among war veterans in particular.

The diminished or constricted responsiveness has been referred to as "psychic numbing" or "emotional anesthesia." This symptom usually begins soon after the traumatic event and is felt to be a distinct change from the pre-traumatic condition. A person experiencing this symptom may complain that he feels detached or estranged from other people, that he has lost his ability to become interested in one or more significant activities that he previously enjoyed, or that his ability to feel emotions of any type, especially those associated with intimacy, tenderness, and sexuality, has decreased markedly.

After experiencing a significant traumatic stressor, a number of individuals develop symptoms of excessive autonomic arousal, such as hyper-alertness, an exaggerated startle response, or difficulty in falling asleep. Others develop recurrent nightmares during which the traumatic event is often relived and which are sometimes accompanied by middle or terminal sleep disturbance. Some individuals complain of impaired memory, difficulty concentrating, or difficulty in completing tasks. In the case of a life-threatening trauma experienced with other people, survivors often describe painful guilt feelings about surviving when so many others have not, or about the things they had to do in order to survive. Activities or situations which may arouse recollections of the traumatic event are often avoided. Symptoms characteristic of Post-traumatic Disorder are often intensified when the individual is exposed to situations or activities which resemble or symbolize the original trauma (e.g., cold snowy weather or uniformed guards for death camp survivors, hot humid weather for veterans of the South Pacific).

Associated features. Associated features may vary depending on the nature of the initial trauma. Depressive symptoms are common and may include all those described as occurring during a Depressive Episode (see page \_\_\_\_). Symptoms of anxiety are also common and may include restlessness, nervousness, and tremor. Increased irritability may be associated with sporadic and unpredictable explosions of aggressive behavior, even upon minimal or no provocation. This symptom has been reported as particularly characteristic of Post-traumatic Stress Disorder war veterans. There may also be non-violent impulsive behavior (sudden trips, unexplained absences, changes in life style or residence). Survivors of concentration camps have associated symptoms which may reflect

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an underlying Organic Mental Disorder, such as failing memory, difficulty in concentration, emotional lability, autonomic lability, headache, and vertigo. Abuse of alcohol or drugs may begin after many types of trauma. Individuals who have suffered physical injury and received pain medication during illness and recovery may develop a chemical dependency, particularly if they have a history of alcohol or drug abuse prior to the injury. Other individuals may develop a chemical or psychological dependency on barbiturates, tranquilizers, or alcohol, which they may use to diminish post-traumatic symptoms such as insomnia, hyperalertness, or anxiety.

Age at onset. The disorder may occur at any age, including during childhood.

Course. Symptoms may begin soon after the traumatic event or situation. It is not unusual, however, for the emergence of characteristic symptoms to occur after a latency period of several days or even months after the original trauma. The more common course for this disorder is the remission of symptoms within six months after the onset of the trauma.

Impairment and complications. Not every stressed person manifests the same degree of impairment, the same "incubation period" or onset, or the same duration of distress. This fact has frequently been expressed in the observation that "every person has his or her own breaking point." Impairment may range from mild to severe, depending in part upon the duration of symptoms. Nearly every aspect of life may be affected by Post-traumatic Stress Disorder. Phobic avoidance of situations or activities resembling or symbolizing the original trauma may handicap the individual either occupationally or in recreational activities. "Psychic numbing" may diminish or destroy interpersonal relationships, such as marriage or family life. The emotional lability, depressive symptoms, and guilt feelings may result in self-defeating behavior, suicide attempts, or completed suicide. Irritability may culminate in aggressive outbursts, either verbal or physical. Impairment may increase with age, as a person's adaptive capacity or physical stamina diminish.

Predisposing factors. These may include prior history of another mental disorder (such as Personality Disorder), more severe or massive trauma, a prolonged series of traumatic events, or trauma of human origin (as opposed to a natural disaster).

Prevalence. The population prevalence is unknown. The prevalence may be related to the nature of the stressor, with some stressors almost invariably producing the disorder (torture) and others producing it less frequently (accidents).

Sex ratio and familial pattern. No information.

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Differential diagnosis. The differential diagnosis includes a Depressive Disorder, Generalized Anxiety Disorder, Phobic Disorder, Adjustment Disorder, and Organic Mental Disorder. It differs from a Depressive Disorder, Generalized Anxiety Disorder, and Phobic Disorder in that symptoms of depression, anxiety, or phobia do not dominate the clinical picture; these diagnoses should be made in addition to Post-traumatic Stress Disorder in those patients who meet the full criteria for them. However, it differs from the Adjustment Disorder in that the stressors producing Post-traumatic Stress Disorder are both more severe and outside the range of human experience usually considered to be normal; it also differs from Adjustment Disorders in that the symptoms and complications tend to be more severe, enduring, and handicapping. It differs from Organic Mental Disorders in that no organic etiology can be found for the memory disturbances, loss of interest, and concentration difficulties. Some patients, particularly the concentration camp survivors, may have an Organic Mental Disorder in addition to a Post-traumatic Stress Disorder, either as a result of head injury or of malnutrition, and in this case both diagnoses should be given.

Diagnostic criteria for Post-traumatic Stress Disorder.

- A. A recognizable stressor that would be expected to evoke significant symptoms of distress in almost all individuals.
- B. Reexperiencing the traumatic event either by:
  - (1) Recurrent and intrusive recollections of the event; or
  - (2) Recurrent dreams of the event; or
  - (3) Suddenly acting or feeling as if the traumatic event were occurring because of an association with an environmental or ideational-stimulus.
- C. Numbing of responsiveness to, or involvement with, the external world, beginning some time after the traumatic event(s) as shown by either:
  - (1) Markedly diminished interest in one or more significant activities; or
  - (2) Feelings of detachment or estrangement from others; or
  - (3) Marked constriction of affective responses.
- D. At least two of the following (not present prior to the traumatic event):
  - (1) Hyperalertness or exaggerated startle response;
  - (2) Initial, middle, or terminal sleep disturbance;

- (3) Guilt about surviving when others have not, or about behavior required to achieve survival;
- (4) Memory impairment or trouble concentrating;
- (5) Avoidance of activities that arouse recollection of the traumatic event;
- (6) Intensification of symptoms by exposure to events that symbolize or resemble the traumatic event.

308.30 Post-traumatic Stress Disorder, Acute

Diagnostic criteria for Post-traumatic Stress Disorder, Acute.

- A. Meets the criteria for Post-traumatic Stress Disorder.
- B. Duration of symptoms less than six months following the onset of the traumatic event.
- C. Symptoms began within six months of the onset of the traumatic event.

309.81 Post-traumatic Stress Disorder, Chronic

Diagnostic criteria for Post-traumatic Stress Disorder, Chronic.

- A. Meets the criteria for Post-traumatic Stress Disorder.
- B. Either (1) or (2):
  - (1) Duration of symptoms six months or more.
  - (2) Symptoms began at least six months after the onset of the traumatic event (latency period).

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UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of )  
 )  
METROPOLITAN EDISON COMPANY, )  
 et al., ) Docket No. 50-289  
(Three Mile Island Nuclear )  
 Station, Unit No. 1 )  
 )

CERTIFICATE OF SERVICE

I hereby certify that a copy of the "People Against Nuclear Energy Brief In Support of Psychological Distress Contentions" and "People Against Nuclear Energy Supplemental Petition to Intervene" were mailed first class postage pre-paid this 22nd day of October, 1979 to the following parties:

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Docket No. 50-289

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