



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

OCT 28 1980

Docket No. 50-320

Mr. R. C. Arnold
Senior Vice President
Attn: George Meicinsky
Metropolitan Edison Company
100 Interpace Parkway
Parsippany, New Jersey 07054

Dear Mr. Arnold:

As specified in the Council on Environmental Quality Regulations, we have requested Federal, State, and local agencies to comment in connection with the Draft Programmatic Environmental Impact Statement related to decontamination and disposal of radioactive wastes resulting from March 28, 1979, accident at Three Mile Island Nuclear Station, Unit 2.

The enclosure to this letter contains a list of comments received subsequent to my transmittal letter of October 15, 1980.

Please review these comments and submit any responses you deem appropriate by November 14, 1980. Your reply should consist of three signed originals and twenty additional copies.

Sincerely,

A handwritten signature in cursive script that reads "Bernard J. Snyder".

Bernard J. Snyder, Program Director
Three Mile Island Program Office
Office of Nuclear Reactor Regulation

Enclosure:
List of Comments Transmitted

cc w/encl:
George F. Trowbridge, Esq.
Shaw, Pittman, Potts & Trowbridge
1800 M. Street, N.W.
Washington, D. C. 20036

8011060

062

Handwritten initials, a large "P" followed by a circled "H".

List of Comments Transmitted

Name of Facility: Three Mile Island Nuclear Station, Unit 2

Licensee: Metropolitan Edison Company
Jersey Central Power and Light Company
Pennsylvania Electric Company

Docket No.: 50-320

Documents Transmitted:

24. A. E. Wasserbach letter, dated October 10, 1980.
25. U.S. Department of Transportation, Federal Highway Administration letter, dated October 9, 1980.
26. Leo L. Navickis letter, dated October 13, 1980.
27. Susan L. Roudebush letter, dated October 3, 1980.
28. Department of Health, Education, and Welfare letter, dated October 10, 1980.
29. Kenneth May letter, dated October 14, 1980.
30. The Maryland Watermen's Association letter, dated October 2, 1980.
31. Brenda A. Witmer letter, dated October 14, 1980.

The following list of documents was unofficially provided to you earlier. They are also officially transmitted by this letter.

1. Earl A. Gulbransen, University of Pittsburgh, letter dated August 27, 1980.
2. Edward J. Walsh letter, dated September 3, 1980.
3. Edwin Charles letter, undated.
4. Irwin J. Bross letter, dated September 5, 1980.
5. Commissioners of Cumberland County letter, dated September 5, 1980.

24

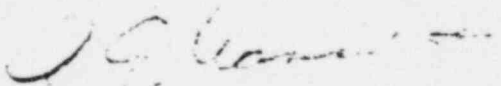
Oct. 10, 1980

Samuel J. Chilik, Secty. of the Commission
Docketing and Service Branch
Nuclear Regulatory Commission
Washington, D. C. 20555

RE: Comments on: Draft-Programmatic
Environmental Impact Statement related
to decontamination and disposal of
radioactive wastes resulting from March
28, 1979 accident Three Mile Island Nuclear
Station Unit 2. NUREG 0683 Aug. 14/80

Dear Sirs:

It seems futile for the NRC staff to attempt to give costs or human exposure to radioactive materials to be cleaned up at Three Mile Island Nuclear Station Unit 2, when there is no designated repository for those materials. Since the Federal Government has NO permanent disposal site, you do not know how long the materials must be kept in temporary storage, what the transportation costs in the future will be, or how long the exposure to workers/public from temporary storage will be, and so cannot have ~~either~~ a figure on either the human health costs or the monetary costs. With permanent inflation in the U.S., the future costs must also include this inflationary factor per year added into cost of clean-up and temporary storage, until a final repository and/or disposal of the materials is found.


A. E. Wasserbach
Box 2308 W. Saug. Rd.
Saugerties, N. Y. 12477

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U. S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

REGION THREE

31 Hopkins Plaza
Baltimore, Maryland

October 9, 1980
IN REPLY REFER TO:
HDE-03

Mr. Bernard J. Snyder, Program Director
Three Mile Island Program Office
Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Dear Mr. Snyder:

Because of time constraints, our Headquarters has requested that the FHWA Regional Office provide comments on the Draft Environmental Impact Statement related to decontamination and disposal of radioactive wastes from Three Mile Island Nuclear Station, Unit 2 (Docket No. 50-320) directly to your office.

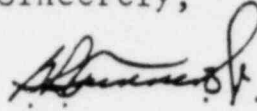
Our review concentrated in particular on the transportation aspects of the proposed action and our comments are as follows:

1. Page 9-17, it is indicated that three to six transport accidents can occur for the range of shipments from TMI-2. It would appear this estimate is based on gross statistics for the trucking industry as a whole and does not take into account difference between intrastate and interstate operations which have different regulatory requirements, nor does it recognize different levels of driver training for the various classification of haulers. Since the transportation of radioactive material is very heavily regulated compared to other industries, we believe the potential number of accidents may be substantially overestimated.
2. From our review of this document, we did not note any discussion of regulatory requirements or proposed control strategies to be employed in order to minimize the risks associated with the transportation of the TMI waste material. A worse case scenario of radioactive material release and contamination (pg. 9-18 and 9-19) without a presentation of proposed mitigation measures to limit exposure does not provide a very objective analysis.

2.

We appreciate the opportunity to review this Draft. Please advise if we can provide additional information or if there are any questions concerning our comments.

Sincerely,



George R. Turner, Jr.
Deputy Regional Federal Highway
Administrator



THE
Maryland Watermen's Association INC.

48 Maryland Avenue, Annapolis, Md. 21401 • (301) 268-7722 • 268-7723 • 269-8622

COMMENTS OF

THE MARYLAND WATERMEN'S ASSOCIATION, INC.

(PEIS), NUREG-0683

Draft Programmatic Environmental Impact Statement Related to Decontamination and Disposal of Radioactive Wastes Resulting from the March 28, 1979 Accident at Three Mile Island Nuclear Station, Unit 2

The Maryland Watermen's Association is a non-profit trade association working on behalf of all commercial fishermen in Maryland. Our organization represents 1800 individual watermen, that is, independent businessmen who have chosen as their profession harvesting various sorts of seafood from the Chesapeake Bay and delivering high quality seafood products to consumers. In addition to our 1800 individual members, we also represent 18 regional Watermen's Associations. We think you will agree that watermen have a definite vested interest in protection of the Chesapeake Bay from it's headwaters to the mouth and a definite vested interest in people's perception and opinion of the quality of the waters of the Bay and seafood harvested from it.

Having spent a good deal of time reviewing the PEIS we must conclude that it is insufficient and damaging itself to the integrity of Chesapeake Bay seafood. This document was not submitted for the general public. It does not address concerns of the general public. It is not written and prepared in terms that laymen and laywomen or consumers or the general public or anyone other than a "scientist" can easily understand.

At least one of the reasons this is so critical is addressed -- VERY BRIEFLY -- in the PEIS itself. In the Summary at the beginning of the document, page S-11, under the heading Socioeconomic Effects, it is stated... "Potential economic impacts include the effects of increased electricity rates, reduced tourism, and possibly resistance to consumption of agricultural and fishery products that the public may think are radioactively contaminated. Families involved in agricultural production are likely to be affected to the largest degree." Further in the same section... "Low but measurable concentrations of Cs-137 would persist in sediments in both the river and the bay for some years following a discharge of water from TMI-2, but the levels would be so low as to have no radiation effects on aquatic species or on man. If these effects are understood by consumers, the marketability of fishery products from

those bodies of water should not be adversely affected. It is therefore important that the public be properly informed if and when such releases occur." (end quote from PEIS) As to the statement that if the effects of the clean-up are properly understood the marketing of seafood products should not be adversely affected, we must go back to our comment on the PEIS itself. This is not an example of properly informing the public of effects.

The marketing of seafood products of the Bay, and indeed of the entire nation, is a long time goal we are just now catching up on. Potential damage that exists from this situation could be just tremendous! Damaging to our overall goals and to the economy of our state. This is not even addressed in the PEIS.

We need to have more public participation in this process. Now. Even if it means slowing down the overall clean-up process slightly. We are not saying the clean-up process should be slowed excessively, but we do need to "properly inform the public." We need a Citizen's Advisory Council on this one, respected and recognized citizen's representatives need to be involved in every step that occurs in the clean-up process.

It was stated by Dr. Bernard Snyder of the TMI Program Office that 25 public meetings had been held to explain and receive comments on the PEIS and alternatives discussed in it and that he felt this was "quite sufficient".⁽¹⁾ We do not feel 25 meetings of this type are sufficient to properly inform the public of what is being done about clean-up of the TMI accident.

At the Annapolis, Maryland September 30, public meeting Dr. Snyder stated rather emphatically several times that the release of processed water from TMI into the Susquehanna River was only an alternative, that the NRC was definitely open to other alternatives; that it was a "very bad assumption" to think the water would definitely go down the Susquehanna. However, all throughout the PEIS and during presentation of NRC Staff at the public meeting we were able to attend, continually the alternative of dumping into the Susquehanna and dilution into the Chesapeake Bay comes up as the favored method of disposal and it is very evident that most of the energy invested into these alternatives focused on the Susquehanna dumping method. We must consider this "dumping" and we can not condone, support, understand or lend credence to this as a viable solution. The Upper Chesapeake Bay fisheries are in a critical condition.

⁽¹⁾ Public Meeting sponsored by MD. Department of Natural Resources and Nuclear Regulatory Commission, Annapolis, Maryland, Sept. 30, 1980

Maryland Watermen's Association, Inc.

Comments: PEIS, NUREG-0683

Page three

The Maryland Department of Natural Resources, Tidal Fisheries Division recently concluded a survey of the population of shad in the Upper Bay. The concluded there were only between 2400 and 7500 fish (shad) present in the entire Upper Bay. 2400 - 7500! For some time now various finfish have not been reproducing in the Chesapeake Bay. The only answer to this, so far, the Maryland Department of Natural Resources has been able to discover is that "there is something wrong with the water."⁽²⁾ Suppose those "low but measurable" quantities of Cs-137 were to persist in the bodies of those 2400-7500 finfish that are in the Bay now? We cannot condone anything so potentially dangerous to the presently (undeclared) endangered species of the Chesapeake Bay.

The final concern we will voice here is there appears to be some consternation and indeed disagreement within the scientific community over some of the data that is the basis of the conclusions in this PEIS. This must be resolved. Because of this, we must agree with the Maryland Ad-Hoc Committee on TMI, that an independent group of scientists needs to be appointed to either further study the processes the EIS uses or confirm the validity of the concepts used and conclusions reached. This group of independent scientists needs to be selected by the citizen's group we mentioned earlier or another citizens group.

(2) Quote from W.R. Carter, Maryland Dept. Natural Resources, Tidal Fisheries Division at a meeting of the Maryland Watermen's Assn., Inc. Board of Directors; September 5, 1980

October 17, 1980
Lancaster, PA.

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Att. Mr. John Aherne

Dear Mr. Aherne,

I am writing to express my
concerns about TMI. I am
absolutely opposed to the re-
start of Unit I. I do not want
low level or high activity waste
stored on the island for any
amount of time. The conditions
of the place are so unstable, I
don't see how you and the
other commissioners could
justify either of these actions.

Please be assured that we
the people do not want any
of the "treated" water dumped
into our drinking water -

the river is dirty now with
fecal matter, iron deposits,
releases from Peach Bottom, etc.
We don't want the waste from
TMI added to what we already
have.

I never want to see TMI
opened as a nuclear facility.

Please see that my statements
are documented, along with
the many you will receive
from the citizens of this area.

Thank You.

Mrs. Brenda A. Watson
1570 Ridgeway Ave.
Lancaster, PA 17603

The House of Charles

90 Nittany Drive

Mechanicsburg, Pa. 17055



Dear Mr. Snyder

I would like to know the answers to the following questions. Questions from this letter are related to (NUREG 0683) Environmental Impact Statement.

1. Why the change in the movement of waste material? Page 3-30 Figure 3.2-2. It was my understanding that waste material (high or low) would be sent by Interstate 81 to Interstate 80 W. Looking at your map it would appear that you will transport waste materials on the west side of the Susquehanna River on US 11 and US 15 North. of the Interstate Bridge that crosses the Susquehanna. This route would not keep with in the guide lines of DOT and NRC.
2. Why was the southern route on U.S Interstate 81 to MD. and then Interstate 70 W. not included?
3. What is the number of truck loads (aprox) of High level materials to be taken from the clean up of the island? Number of truck loads of low level (aprox.) to leave the island?
4. Why have you not included an update of your Aerial Radiological Survey dated Aug. 1976 (A.E. Fritzsche)? It seems a good aerial survey showing background after March 1979 compared to 1976 would help to clear the fears of many people. (see page 4 Appendix C (NUREG-0637))

Thank you,

Sincerely,

Edwin Charles

Edwin Charles

P.S. How could I obtain a copy of the 1979, and 1980 U.S. Nuclear Regulatory Commission Annual Report? I have a copy of the 1978 and have found it very interesting.



DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE
PUBLIC HEALTH SERVICE
FOOD AND DRUG ADMINISTRATION
ROCKVILLE, MARYLAND 20857

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OCT 10 1980

Mr. Harold Denton
Office of Nuclear Reactor Regulations
U.S Nuclear Regulatory Commission
Washington, D.C. 20556

Dear Mr. Denton:

The comments of the Bureau of Radiological Health on the Draft Programmatic Environmental Impact Statement for the Three Mile Island cleanup (NUREG-0683) apply only to potential radiological contamination in food pathways.

Obviously, the primary food pathway would be through discharge of radiological contaminants into the Susquehanna River. We recommend that an appropriate river water and biota monitoring program be initiated to measure H-3, Sr-89, Sr-90, Cs-134 and Cs-137 downriver and even into the Chesapeake Bay. This should be coordinated by the EPA as part of their long-term State/Federal TMI environmental surveillance program. The surveillance should be carefully planned with routine sampling at pre-determined sampling points principally downriver, but also a few miles upriver, on a monthly or quarterly basis. In addition to providing assurances to the public during periods when unplanned discharges are unlikely to occur, the monitoring effort would yield a reference background data base for use whenever a planned or unplanned discharge might occur.

Although accidental airborne releases (evaporation) of H-3 (as tritiated water) are quite unlikely to occur, efforts should be made (or continued) to monitor off-site tritium in air levels.

We have some question about disposition of processed (cleaned up) water from the Unit 2 containment building. In Chapter 5 of the document, several alternatives for disposition of processed water from the auxiliary and fuel handling buildings are presented, such as long-term storage in tanks on site, evaporation, chemical solidification, and discharge into the river. (See Section 5.2.2.2, pages 5-12 and 5-13.) However, when the fate of the processed water from the reactor is discussed in Chapter 6, it appears the only proposed disposition is into the center channel of the Susquehanna River. (See Section 6.3.4.1, page 6-19.) If only for academic reasons, alternatives for disposition of this water, parallel to those cited in Chapter 5, should be discussed in Chapter 6.

Sincerely yours,

John C. Villforth
Director
Bureau of Radiological Health

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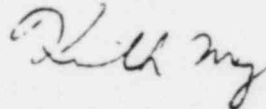
1 Woodthorne Ct. #5
Owings Mills, Md. 21117
Oct. 14, 1980

Dr. Bernard Snyder
Program Director, Three Mile Island Program Office
Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Dear Dr. Snyder,

Please find enclosed a comment of mine on the PEIS for
TMI-2, NUREG-0683.

Yours truly,



Kenneth May

Comments on NUREG-0683

A sizeable portion of our economy in Maryland is the seafood industry of the Chesapeake Bay. At the scoping hearings in Baltimore, both Daniel Beck, president of the Baltimore County Watermen's Association, and I testified that the safety of fishery products could be damaged in the public's eyes by discharge of wastewater since many people would assume the products were not safe no matter what the truth is. The PEIS sloughs this concern off by saying that "the marketability of fishery products from these bodies of water should not be adversely effected"¹ if the effects are understood by consumers. However, the PEIS in no way indicates the empirical basis for this assertion, like a marketing study, nor does it indicate how consumers will be educated. As a federal court has stated, "Where there is no reference to scientific or objective data to support conclusory statements, NEPA's full disclosure requirements have not been honored."² In conclusion, the "analysis" of this important issue does not fulfill EPA requirements and you should do some kind of study to determine the real effect on the seafood market of the possible dumping of radioactive wastewater.

As I understand it, the engineering company that will do the work on the cleanup is Bechtel Corp.³ The Bechtel Corp. last year settled a sex discrimination suit brought by a

group of female employees for \$1.4 million and is currently being sued by a group of black employees for racial discrimination.⁴ The company has a policy that female attorneys will not be allowed in Arab states, where Bechtel has a number of projects.⁵ In 1976, the Justice Department charged that Bechtel had, since 1971, conspired to boycott companies and individuals blacklisted by Arab nations.⁶ This boycott was especially aimed at Jews. In January 1977, Bechtel agreed in principle to a consent agreement on the suit. Caspar Weinberger, chief counsel of Bechtel, lists his Episcopalian affiliation on his biographical information to reassure clients who may think that he is Jewish.⁷ These facts raise the possibility that a company which may discriminate against women, blacks and Jews is being inserted in the Three Mile Island area as a large employer. The possible effect of this on the employment and social structures should be analyzed in the impact statement.

FOOTNOTES

1 PEIS, p. S-11

2 NRDC v. Grant, 355 F. Supp. 230 (E.D.N.C. 1973)

3 The American Lawyer, October, 1980, "Mixed Results for Weinberger et Bechtel", p. 20

4 Ibid., p.13

5 Ibid., p. 20

6 Ibid.

7 Ibid.



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THE
Maryland Watermen's Association INC.

48 Maryland Avenue, Annapolis, Md. 21401 • (301) 268-7722 • 268-7723 • 269-6622

October 2, 1980

Dr. Bernard J. Snyder
Program Director
Three Mile Island Program Office
Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Dear Dr. Snyder:

Enclosed are comments from our organization that I understand will be made part of the public record on the Draft Programmatic Environmental Impact Statement (NUREG-0683).

I cannot stress enough the fact that the Susquehanna River and Chesapeake Bay must be protected throughout the entire clean-up process. Avoiding any further accidental or planned environmental degradation and stress to these natural resources is something we must do not only for the hundreds of thousands of people who depend on them for their livelihood, but for the entire population related to and linked to these resources in any number of ways.

As I understand it, the Commissioners of NRC will ultimately decide what methods of decontamination and disposal is used. When will this decision be made?

Also, I would like a list of the Commissioners.

Sincerely,

Debby George
Administrative Director

Mr. Bernard J. Snyder ① Oct. 13, 1980
Program Director

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TMI Program Office
Office of Nuclear Reactor Regulation

Dear Mr. Snyder: Thank you and Mr. Deute
for the PEIS for TMI. Reading it over
I see where ion-exchange resins are
used in the water clean-up. I would make
the suggestion that you people try (on
a lab scale) a material having the
ability to remove cations and anions from
plating rinse waters, for example. This
material is insoluble starch xanthate (ISX)
This material is cheaper than resins and
is not made from petroleum derivatives.
It can also be made on site by the
user. It can be obtained from several

(2)

Commercial suppliers or the U. S. D. A.
Northern Regional Laboratory in Peoria,
Ill. in sample amounts.

I am strongly in favor of nuclear
power generation and wish your agency
the best of success! Respectfully

P.S. Please let
me know if
you do, by this
mail.

Leo L. Navickis

LEO L. NAVICKIS

1501 GARDNER LN. #81

PEORIA, ILL. 61614
HTS,

414 BELVEDERE RD.
HARRISBURG, PA. 17109
OCTOBER 3, 1980

DEAR SIR,

I AM A RESIDENT OF HARRISBURG AND LIVE TWELVE MILES FROM THREE MILE ISLAND. I AM VERY CONCERNED ABOUT THE CLEAN UP PROCEDURES AND POSSIBLE REOPENING OF UNIT I.

I FEEL THAT EVERY STEP OF THE CLEAN UP OF THE UNIT II REACTOR SHOULD BE VERY CLOSELY SUPERVISED BY THE NUCLEAR REGULATORY COMMISSION AND THE ENVIRONMENTAL PROTECTION AGENCY. THE PUBLIC HAS LOST ALL FAITH IN MET. ED.'S ABILITY TO BE RESPONSIBLE FOR OUR SAFETY. I FEEL THE CLEAN UP OF UNIT II IS A SITUATION IN WHICH THE FEDERAL GOVERNMENT SHOULD STEP IN AND HELP SUPPLY THE FUNDS NECESSARY TO ENSURE THE SAFEST CLEAN UP POSSIBLE. NO PRICE CAN BE PUT ON THE MENTAL AND PHYSICAL WELLBEING OF HUMAN BEINGS.

THE PSYCHOLOGICAL TRAUMA OF THE ACCIDENT, VENTING, AND FUTURE CLEAN UP ACTIVITIES IS IMMEASURABLE. I PERSONALLY HAVE BEEN UNDER MUCH STRESS OVER THE PAST SEVENTEEN MONTHS. I FEAR SOMETHING WORSE MIGHT HAPPEN OR ELSE IN TEN OR TWENTY YEARS WE WILL DISCOVER THAT ALL THE REASSURANCES OF NO DANGER TO OUR HEALTH WERE UNFOUNDED. THIS IS THE FIRST TIME A MAJOR CLEAN UP OPERATION OF THIS SCALE HAS BEEN NECESSARY SO SOME RISK IS INVOLVED. MY HUSBAND AND I ARE MOVING THIRTY MILES FURTHER FROM THREE MILE ISLAND. HOPEFULLY THIS WILL BE FAR ENOUGH AWAY, BUT I UNDERSTAND THAT THERE IS NO MONITORING OF LOW LEVEL

RADIATION FURTHER AWAY THAN FIFTEEN MILES FROM THREE MILE ISLAND. PLEASE KEEP US AWARE OF ANY NEW CLEAN UP PROCEDURES OR PROBLEMS. NOT KNOWING WHAT IS BEING DONE IS VERY HARD TO COPE WITH.

I AM DEFINATELY OPPOSED TO RELEASING ANY WATER INTO THE SUSQUEHANNA RIVER OR THE DEEP WELL INJECTION METHOD. THE PEOPLE OF COLUMBIA, LANCASTER, AND ALL THE OTHER AREAS DOWN RIVER FROM THREE MILE ISLAND HAVE A RIGHT TO SAFE WATER AND FISH.

I AM ALSO OPPOSED TO EVER ALLOWING MET. ED. REOPEN UNIT 1. THEY HAVE PROVEN THEIR INEPTNESS IN HANDLING A NUCLEAR REACTOR SAFELY. I HOPE YOU WILL STRONGLY CONSIDER THE DATA COLLECTED BY THE THREE MILE ISLAND ALERT INCLUDING MANY EXAMPLES OF NEGLIGENCE AND NONCOMPLIANCE WITH NRC STANDARDS. I DO NOT WANT UNIT 1 OPENED UNDER ANOTHER COMPANY EITHER. WE HAVE SUFFERED ENOUGH PSYCHOLOGICAL STRESS AND HAVE THE RIGHT TO SAY NO MORE. NUCLEAR POWER HAS NO FUTURE. THIS ACCIDENT HAS EDUCATED US ON HOW FOOLISH THIS SOURCE OF ENERGY IS. IT IS NO COMFORT TO KNOW THAT AFTER THIRTY YEARS, THE REACTORS ARE SO RADIOACTIVE THAT THEY MUST BE CLOSED. THERE IS ALSO THE DANGEROUS PROBLEM OF WHERE TO SAFELY DISPOSE OF THE WASTE. WHY ARE THE LARGEST NUMBER OF NUCLEAR PLANTS IN THE STATE WITH THE LARGEST COAL DEPOSITS? (ESPECIALLY WHEN CLEAN USE OF COAL IS POSSIBLE IF CLEAN AIR STANDARDS ARE ENFORCED.)

I AM ASKING THAT YOU TRY TO PUT YOURSELF IN THE PLACE OF THOSE WHO LIVE AROUND THREE MILE ISLAND BEFORE YOU MAKE ANY DECISIONS. A PUBLIC VOTE SHOULD BE CARRIED OUT BEFORE THE REOPENING OF UNIT 1

SHOULD EVEN BE CONSIDERED. I FEEL THERE IS NO QUESTION OF WHAT THE RESULTS WOULD BE.

PLEASE DON'T LET US DOWN AND ENDANGER OUR HEALTH AND OUR FUTURE. IF YOU HAVE ANY CONSIDERATION FOR THE MENTAL AND PHYSICAL WELLBEING OF THE PEOPLE AROUND THREE MILE ISLAND, UNIT 1 WILL NEVER BE REOPENED. THANK YOU FOR YOUR TIME AND HOPEFULLY YOUR CONSIDERATION.

SINCERELY,

SUSAN L ROUDEBUSH

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Irwin D.J. Bross, Ph.D.
Director of Biostatistics
Roswell Park Memorial Institute
666 Elm Street
Buffalo, N.Y. 14263

No opinions here expressed should be construed as reflecting official positions of the administration of
Roswell Park Memorial Institute or of the N.Y. State Health Department.

September 5, 1980

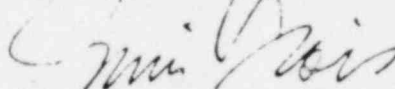
Richard H. Vollmer, Director
Three Mile Island Support
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Dear Mr. Vollmer:

In conjunction with the hearings of the U.S. Nuclear Regulatory Commission on the newly released draft Programmatic Environmental Statement (DPES), I would like to submit this critique. Using the metatechnological analysis appropriate to EIS, this critique demonstrates that, relative to viable technological alternatives, the proposed plan is the least feasible, the most expensive, and the most dangerous to the public health and safety. It is further pointed out that NUREG-0683 is an incompetent document from an epidemiological and biostatistical standpoint and all the estimates of hazard are so remote from the real risks that it constitutes a dangerous fraud upon the public.

There is a much better way to do the job of disposing of the radioactive wastes at TMI-2 but there is no way to make NRC bureaucrats listen to reason when they are in complete control of the proceedings.

Very sincerely yours,



Irwin D.J. Bross, Ph.D.
Director of Biostatistics

IDJB/mak
Enc.

CRITIQUE OF NUREG-0683 BY DR. IRWIN BROSS

Let us start with the question: What is an appropriate basis for a critique of a Draft Programmatic Environmental Statement (DPES) of any plan for the decontamination and disposal of radioactive wastes resulting from the March 28, 1979 accident at Three Mile Island Nuclear Station, Unit 2 (TMI-2)?

The clear intent of the National Environmental Policy Act was to insure that the public health and safety be protected. When, as here, there are alternative technologies for achieving the same goal, then the DPES should establish that the technology that is proposed minimizes the danger to the public health, is technologically feasible, and cost-effective. Hence, the critique of a DPES lies in the province of what is now being called "metatechnology". For a more complete discussion see my new paper, METATECHNOLOGY: A TECHNOLOGY FOR THE SAFE, EFFECTIVE, AND ECONOMICAL USE OF TECHNOLOGY, which will be published in the new British journal, METAMEDICINE, in February 1981 (see Schedule A). From this standpoint we must consider alternative courses of action (and alternative technologies) for disposal of the radioactive wastes from the accident at TMI-2. Although there are numerous technological alternatives, for present purposes it will suffice to consider only three:

1. Inaction. No other action beyond present maintenance operations for an indefinite period.

2. DPES*. The programmatic plan proposed in NUREG-0683 for a 5 to 7 year clean-up of TMI-2.
3. Entombment. Disposal of the radioactivity wastes by immobilizing them in concrete in the containment of TMI-2.

A metatechnological evaluation involves comparison of the costs and benefits of the alternative technologies and the choice of a disposal technology that will accomplish its purpose with minimum risks to the public health and safety. The key factors in the cost-benefit evaluation here are the following:

What is the extent to which:

- (k-1) Humans are directly involved in the disposal operations?
- (k-2) Radioactive materials must be transported inside the containment or removed and transported elsewhere?
- (k-3) New technologies must be developed to do the job?

As a rule-of-thumb an unfavorable situation with respect to the key factor will at least double the complexities, practical difficulties, and operational costs of the overall project. It will increase risks to workers and the public by a greater amount, roughly a factor of 4.

Since there is consensus that a first alternative, inaction, is not appropriate for TMI-2, only the second and third alternatives will be considered in what follows. However, an official DPES should also evaluate this alternative carefully. The reassurances to the

public on TMI-2 suggest that NRC calculations do not show any appreciable risk of meltdown from the present haphazard configuration of the rods and other radioactive material. The only scenarios that could produce such a risk (e.g., earthquake) involve the mobility of the rods and the large amount of radioactive water in the containment. The risks become completely negligible if the water used to mix with the concrete and the radioactive materials are immobilized in this concrete. Hence, it follows that the goal of suitable disposal of the radioactive wastes in TMI-2 can be achieved equally well by the plan proposed in NUREG-0683 or by entombment. Earlier claims of further benefit from NUREG-0683 by reactivating TMI-2 are now recognized as absurd. The cost of meeting NRC exposure levels (5 rem/year) by decontamination of TMI-2 (where levels of 100 rem/hr have been reported) far exceed the costs of building an up-to-date installation de novo.

Since the benefits for the alternative technologies are about equal, the metatechnological choice here hinges on the costs, particularly the health costs to workers in the clean-up and to the general public living near TMI-2 or downwind or downstream from the installation. The situation with respect to the key factors can be summarized as follows:

With respect to the transport of radioactive materials, the proposed clean-up plan involves removal of these materials from the containment and transportation to other locations. Again, to implement the plan in DPES* there must be purging of radioactive water into a river system that serves or affects many U.S. cities. With entombment the radioactivity stays inside the containment of TMI-2. Therefore,

with respect to the second key factor (k2) there is minimal movement of radioactive materials in the entombment option, but extensive movement of these materials (and possible dissemination into the environment) in DPES*. For this reason alone NUREG-0683 should be rejected as an incompetent document by the basic principles of metatechnology.

With respect to the first key factor (k-1), the extent of involvement of human beings in the processing of radioactive materials, the entombment option has minimal involvement. The processes for dealing with concrete (including the use of cooling pipes and other refinements) represent a well-known technology that can be largely carried out by machinery under remote control. In contrast, DPES* makes extensive use of human workers in an environment contaminated by both low-level and high-level radioactive wastes. The estimates of health effects in NUREG-0683 underestimate the actual hazards by factors of 100 or 1000.

The Mickey Mouse arithmetic used in federal agencies for what are called "radiological assessments" involves too many scientific errors to detail here. I have given detailed examples at a hearing of the Department of Energy on West Valley (Schedule B) which explains why exposures are consistently underestimated by factors between 10 and 100. In addition, the health effects for given exposures are consistently underestimated by a factor of 10 or more. Documentation of the new factual evidence on persons actually exposed to low-level radiation (which shows 10-fold higher health risks) was given in my invited presentation to the American Statistical Association in Houston, Texas, on August 13, 1980 (Schedule C). The net effect is that the estimates in

NUREG-0683 concerning death and disability for workers understate the actual risks by a factor of 100-1000. When such unrealistic estimates are used in a DPES, this represents a reckless endangerment of the public health. There is no question but the DPES* involves extremely serious hazards to the workers that are being deliberately covered up by the Mickey Mouse arithmetic of these "radiological assessments".

The combination of the first two factors, extensive use of humans (k-1) in close proximity to radioactive materials (k-2) create a difficult situation for DPES*. Safe operations would require new technological developments that are beyond the present state of the art. The difficulties in attempting to develop new technological tools on-site and on-the-job pose formidable management problems which compound the difficulties. In my draft EIS for West Valley, I have discussed these management problems at some length (Schedule D). While a clean-up of TMI-2 is simpler than a clean-up at West Valley, the record of management at TMI-2 and past failures with simple tasks is not encouraging. Very serious dangers, both to the workers on the job and to the public, from failures of untested technologies developed on-site and on a crash basis are ignored in NUREG-0683 and elsewhere in DOE-NRC planning. In contrast, entombment minimizes worker involvement and the manipulation of the radioactive wastes. It uses familiar concrete technologies that avoid most (though not all) of the problems that would require new technology. There could be added technical problems in cooling systems that would require some extension of existing technology. However, entombment operations are orders of magnitude simpler and less fussy than the clean-up proposed in DPES*.

From this qualitative analysis (which could be supplemented with quantitative metatechnological analysis), it follows that the entombment option is much more technologically feasible than the plan in NUREG-0683. Again, the rule-of-thumb on costs (and the adverse situation of DPES* on all three key factors) means that DPES* will cost at least 8 times more than entombment. If, with inflation, entombment costs \$0.5 billion, then DPES* will cost at least \$4.0 billion. These costs will have to be paid by ratepayers and taxpayers of Pennsylvania and other states and perhaps by shareholders of the utility. As noted at the start, the extra money will buy no actual benefits. Both alternative technologies will do the disposal job equally well. Moving humans into the containment of TMI-2 and moving radioactive wastes out of it is costly and this money buys nothing but grief for both workers and the public.

The only explanation offered here for the NRC insistence on DPES* is that bureaucrats follow their own special "logic" where it is easier to endanger the health and safety of thousands of human beings than to bend NRC regulations to deal sensibly with the unprecedented situation at TMI-2. If there are legal problems in entombment, I believe Congress would act to change the laws since this will save billions of dollars and perhaps hundreds of human lives.

Finally, let us come back to the real issue here, the choice of an alternative technology that will minimize the risks to the public health and safety. NUREG-0683 relies on inadequate "radiological assessments" instead of on more realistic "public health assessments". We now have

more than 20 years of experience and more than 20 specific instances where both kinds of assessments were made (Schedule C). In each case, the "radiological assessment" predicted that there would be no hazard from the exposure to nuclear or medical radiation. In each case a genuine "public health assessment" found evidence of serious hazard to the persons exposed. NRC "radiological assessments" are fake "science" and do nothing to protect the public health and safety from radiation hazards. I have further discussed the distinction between "radiological" and "public health" assessments in a letter written in conjunction with the Krypton purging (Schedule E).

Any adequate "public health assessment" of the danger to the public health and safety from implementation of the proposal in NUREG-0683 would show that the "radiological assessments" have covered up the grave dangers that would occur. Since there is a cheaper, easier, and safer way to dispose of the radioactive wastes at TMI-2--essentially immobilizing them in an ideal "tomb" (a containment that can never again be used for other purposes)--only idiots would go ahead with the NUREG plan. However, from my personal contacts with the decision-makers involved in this issue, I am confident that the clean-up of TMI-2 will follow the NUREG-0683 plan.