A-4

April 19, 1982

SECY-82-165

POLICY ISSUE
(Information)

For: The Commissioners

From: Executive Director for Operations

Subject: REVISED NRC-DOE MEMORANDUM OF UNDERSTANDING CONCERNING THE REMOVAL AND DISPOSITION OF SOLID NUCLEAR WASTES FROM CLEANUP OF THE THREE MILE ISLAND UNIT 2 NUCLEAR PLANT

Purpose: To transmit subject revised Memorandum of Understanding.

Discussion: The subject revised Memorandum of Understanding (MOU) was signed by Bernard J. Snyder, Program Director, TMI Program Office for the NRC (under Delegations of Authority provided by the EDO and Director, NRR) and Franklin E. Coffman, Deputy Assistant Secretary for Nuclear Waste Management and Fuel Cycle Programs (Office of Nuclear Energy) for DOE (Enclosure 1). The MOU, first signed in July 1981 (SECY-81-446), formalized the working relationship between the two agencies with respect to the removal and disposition of solid nuclear wastes generated during the cleanup of TMI-2. It represented a significant step towards ensuring that the TMI site does not become a long-term waste disposal facility.

The revised MOU alters the original in two areas, the TMI-2 reactor fuel and the makeup and purification system demineralizers. Instead of taking only samples of the damaged fuel, the DOE has now agreed to accept the entire core for R&D and storage at a DOE facility. The terms of ultimate core disposal will be negotiated between DOE and the owner. Additionally, the DOE has agreed to take possession of and retain the highly radioactive purification system resins on a reimbursable basis. This was presented as an option in the original version of the MOU.

Enclosures 2 and 3 include an April 7, 1982 letter from Secretary James B. Edwards to Governor Richard Thornburgh

Contact:
B. J. Snyder, TMIPO:NRR
49-27761

on this subject, as well as a copy of the recently signed "Agreement in Principle" between GPU Nuclear and the DOE. In summary the "Agreement in Principle" highlights; 1) DOE's acceptance of ownership of the TMI-2 core from GPUN for examination, storage and disposal, and 2) GPUN's agreement to reimburse DOE for reasonable costs associated with shipment, storage (except during R&D period) and disposal. The specifics of the "Agreement in Principle" will be formalized by written contract between the two parties.

DOE agreement to accept the entire core and purification system resins is a significant step which has been advocated by the NRC. The planned acquisition and examination of these materials should provide information of generic value on nuclear power plant safety as well as eliminating important elements of concern in the TMI-2 cleanup.

A Federal Register Notice (Enclosure 4) pertaining to the revised MOU has been prepared by the staff for issuance. In addition, copies of the revised MOU will be sent to appropriate Congressional Committee Chairmen as well as several members of the Pennsylvania delegation (Enclosure 5).

William J. Dircks
Executive Director for Operations

Enclosures:
1. Memorandum of Understanding
2. Ltr. to Gov. Richard Thornburgh
   fm. Secretary James Edwards
   dtd. 4/7/82
3. "Agreement in Principle" between
   GPU Nuclear and DOE
4. Federal Register Notice pertaining
   to revised MOU
5. Draft Congressional ltr. and
   Committee List

ENCLOSURE 1

Memorandum of Understanding
Between the
U.S. Nuclear Regulatory Commission
and the
U.S. Department of Energy
Concerning the Removal and Disposition of Solid Nuclear Wastes from Cleanup of the Three Mile Island Unit 2 Nuclear Plant

I. Objective

This memorandum of understanding specifies interagency procedures for the removal and disposition of nuclear wastes resulting from cleanup of the Three Mile Island Unit 2 plant. This will help to ensure that the TMI Site does not become a long-term waste disposal facility.

II. NRC Roles and Responsibilities

The NRC has the responsibility under the Atomic Energy Act of 1954 as amended (42 U.S.C. 2011 et seq.), to regulate all licensee activities at the TMI-2 site, including waste management, and ensure these activities are carried out in accordance with the requirements of applicable rules and regulations and the requirements of Facility Operating License Number DPR-73, as modified by amendments or orders issued by the NRC. NRC will carry out its responsibilities by onsite observation of licensee activities. As required, policy, and technical support will be provided to the NRC TMI Site Office by NRC Headquarters and Regional Office(s).

NRC will work cooperatively and closely with the DOE, and will keep DOE fully and currently informed of NRC's activities.

NRC will continue to keep public, state and local officials informed of NRC's activities. When appropriate, NRC will involve DOE in these information exchanges with the public, state and local officials.

III. DOE Role and Responsibilities

Where DOE determines that generically beneficial research, development and testing of the TMI-2 accident generated solid wastes can be carried out, DOE will perform such activities at appropriate DOE facilities. For those other wastes that cannot be disposed of in commercial low level waste facilities, DOE may also assume responsibility for removal, storage, and disposal to the extent that the licensee provides reimbursement to the DOE. These activities will be undertaken to the extent consistent with appropriate statutory authority. NRC licensing of DOE facilities that are utilized for storage, processing or disposal of TMI-2 accident generated wastes will not be required since these facilities have primary uses other than for receipt and storage of wastes resulting from licensed activities.

The DOE will provide technical support to the licensee and the NRC as deemed appropriate.

DOE will work closely with the NRC and keep NRC informed of DOE's activities.

IV. Currently Identified TMI-2 Accident Generated Solid Radioactive Wastes

The following lists those TMI-2 accident generated solid radioactive wastes which currently exist or are planned to be generated. This listing may be modified in the future as the cleanup progresses.

1. EPICOR-II System Wastes

Forty-nine ion exchange resin liners with loadings up to 1500 curies/liner are in temporary storage at the TMI-2 site. DOE plans to develop a prototype high integrity container (HIC), production units of which, if utilized by the licensee, may allow these liners to be acceptable for licensed disposal in commercial land burial facilities some 1-2 years from now. DOE is also performing characterization experiments on one of these liners and may find it desirable to extend its R&D program to other liners. Should a more expeditious handling of these wastes be required due to the potential for a limited release to the storage environment (which could cause public concern), a contingency plan will be implemented wherein DOE would at its discretion take receipt of these EPICOR liners on a reimbursable basis from the licensee for storage or disposal. Future EPICOR-II liners are anticipated to be loaded to allow commercial shallow land disposal offsite by the licensee.

2. Submerged Demineralizer System Wastes

It is anticipated that the dispersed radioactivity in accident generated water will be deposited on zeolites in submerged demineralizer system (SDS) liners. Due to the unique character and nature of these wastes, DOE will take possession of and retain these liners to conduct a waste immobilization research and development and testing program.

3. Reactor Fuel

Following removal of the damaged core from the reactor vessel, the entire core will be shipped to a DOE facility to survey and select those portions most appropriate for DOE's R&D program. Information obtained from detailed examinations is expected to be of generic benefit to design, fabrication and operation of reactor cores in a safe and efficient manner for current and future nuclear power plants. The remainder of the core will remain in storage at the DOE facility and will be ultimately disposed of under an agreement to be negotiated between DOE and the owner.

4. Transuranic Contaminated Waste Materials

As the cleanup progresses, some waste materials (e.g., sludges) may be found to be contaminated with transuranics at levels above which commercial low level burial facilities are authorized to accept. Alternatives for such material will be considered on a case-by-case basis and could include archiving, R&D evaluation or temporary storage onsite, or at a DOE facility awaiting further processing and/or disposal in a permanent repository offsite. Depending on the nature of these materials, DOE's activities could either take the form of an R&D program of generic value, or would be subject to reimbursement by the licensee.

5. Makeup and Purification System Resins and Filters

During the TMI-2 accident, the makeup and purification system demineralizer vessels and filters were highly contaminated by letdown

of reactor coolant through the system. These resins and filters have not been characterized, however, based on radiation measurements, the resins and filters are believed to have specific activities well in excess of the loadings on the high specific activity EPICOR-II prefilters and are considered unsuitable for commercial land disposal. Due to the generic value of the information to be obtained and the very high specific activities of the filters, DOE will take possession and retain these filters for research and development activities. DOE will also take possession of and retain purification system resins either for an R&D program of generic value or for storage or disposal on a reimbursable basis.

6. Other Solid Radioactive Wastes

The low-level wastes associated with decontamination (e.g., some ion exchange media, booties, gloves, trash) will be disposed of by the licensee in licensed commercial low level burial facilities.

V. This Memorandum of Understanding will take effect when it has been signed by the authorized representative indicated below for each agency. DOE and NRC shall each have the right with the consent of the other party to modify this agreement.

FOR THE U.S. NUCLEAR REGULATORY COMMISSION

Bernard J. Snyder

Bernard J. Snyder, Program Director
TMI Program Office
Office of Nuclear Reactor Regulations

Date: 3/15/82

FOR THE U.S. DEPARTMENT OF ENERGY

F E Coffman

Franklin E. Coffman
Deputy Assistant Secretary for
Nuclear Waste Management and
Fuel Cycle Programs
Office of Nuclear Energy
Date: 3/15/82

ENCLOSURE 2

THE SECRETARY OF ENERGY
WASHINGTON, D.C. 20585

April 7, 1982

Honorable Dick Thornburgh
Governor of Pennsylvania
Harrisburg, Pennsylvania 17120

Dear Governor Thornburgh:

Thank you for your March 11, 1982, letter regarding our mutual discussions about a plan for the Department of Energy to assume possession and responsibility for safe disposal of the entire core in the damaged Unit 2 reactor on Three Mile Island. We appreciate your extensive efforts to facilitate a mutually acceptable arrangement among the Department of Energy, the Nuclear Regulatory Commission, and General Public Utilities.

Enclosed please find a signed copy of a Memorandum of Understanding between the U.S. Nuclear Regulatory Commission and the Department of Energy specifying objectives, roles, and responsibilities for removal of the entire damaged core. Also please find an enclosed Agreement in Principle between the Department of Energy and General Public Utilities for acquisition of the damaged TMI-2 reactor core by the Department of Energy. These two documents provide a basis for developing the detailed contractual agreements for taking the entire core as soon as it is removed from the reactor.

Thank you again for your leadership in providing a framework for proceeding with the cleanup of TMI-2. I doubt seriously if we would have accomplished this without your efforts.

Sincerely,

James B. Edwards

Enclosures

ENCLOSURE 3

Agreement in Principle

Acquisition of the Damaged TMI-2 Reactor Core by DOE

Whereas, the Owners of Three Mile Island Nuclear Generating Station, Metropolitan Edison Company, Pennsylvania Electric Company, Jersey Central Power & Light Company, all subsidiaries of General Public Utilities Corporation, are desirous of completing the defueling, cleanup, and disposal of waste from the TMI-2 nuclear powerplant in as safe and efficient manner as possible, and

Whereas, it now appears likely that shipment of the bulk of the damaged fuel immediately upon removal from the reactor vessel offers significant advantages from a public health and safety as well as from a cost point of view, and

Whereas, the Department of Energy (DOE) is authorized to conduct a research and development program to examine the damaged reactor core so as to enhance understanding of degraded core performance and thereby contribute to nuclear reactor safety on a generic basis, and

Whereas, acquisition of the entire TMI core will significantly enhance the value of the research and development program and its potential usefulness in evaluating generic reactor safety matters:

It is therefore agreed that:

1. The Department will acquire ownership of the damaged core from the Owners at no cost to DOE.

2. The Department will arrange for shipment of the entire core to a DOE site for an examination program. Title to, and responsibility for, the damaged fuel will be transferred to the DOE upon leaving the TMI site boundary.

3. The Owners will reimburse cost of shipping to a DOE site.

4. The Department will fund the cost of interim storage, survey of the core, and selection of samples for detailed examinations, a program expected to take about 3 to 5 years.

5. The Owners will reimburse costs associated with storage (beyond the R&D period referred to in item 4) and disposal, up to a reasonable value to be agreed upon. The cost to be reimbursed shall not exceed that which the Owner would incur in storage of a TMI type core in a TMI-1 fuel pool awaiting ultimate disposition, and for ultimate disposal in a Government repository.

6. This Agreement is contingent upon negotiation and execution of a written contract between DOE and the Owners, which contract shall define the particulars to a degree satisfactory to all parties.

3/15/82

On Behalf of the Owners

3/19/82

On Behalf of the Department of Energy

Witness

Governor of Pennsylvania

Enclosure 4

UNITED STATES NUCLEAR REGULATORY COMMISSION

DOCKET NO. 50-320

NOTICE OF REVISION OF A MEMORANDUM OF UNDERSTANDING BETWEEN THE U.S. NUCLEAR REGULATORY COMMISSION AND THE DEPARTMENT OF ENERGY

The U.S. Nuclear Regulatory Commission (the Commission) has recently signed the attached revised version of its Memorandum of Understanding with the Department of Energy (the Department) concerning removal and disposition of solid nuclear wastes from cleanup of the Three Mile Island Unit 2 nuclear plant.

The revised MOU alters the original (46 FR 88614) in two areas, the TMI-2 reactor fuel and the makeup and purification system demineralizers. Instead of taking only samples of the damaged fuel, the DOE has now agreed to accept the entire core for R&D and storage at a DOE facility. The terms of ultimate core disposal will be negotiated between DOE and the owner. Additionally, the DOE has agreed to take possession of and retain the highly radioactive purification system resins on a reimbursable basis. This was presented as an option in the original version of the MOU.

Dated at Bethesda, Maryland, this 8th day of April 1982.

FOR THE NUCLEAR REGULATORY COMMISSION

Bernard J. Snyder

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

DRAFT LETTER

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

ENCLOSURE 5

Docket No. 50-320

The Honorable Morris K. Udall
Chairman, Subcommittee on Energy
and the Environment
Committee on Interior and Insular Affairs
United States House of Representatives
Washington, DC 20515

Dear Mr. Chairman:

The Nuclear Regulatory Commission has recently revised its Memorandum of Understanding with the Department of Energy concerning the removal and disposition of solid nuclear wastes from the cleanup of the Three Mile Island Unit 2 nuclear plant. The revised MOU alters the original (previously forwarded to your office) in two areas, the TMI-2 reactor fuel and the makeup and purification system demineralizers. Instead of taking only samples of the damaged fuel, the DOE has now agreed to accept the entire core for R&D and storage at a DOE facility. The terms of ultimate core disposal will be negotiated between DOE and the owner. Additionally, the DOE has agreed to take possession of and retain the highly radioactive purification system resins on a reimbursable basis. This was presented as an option in the original version of the MOU.

Sincerely,

William J. Dircks
Executive Director for Operations

Enclosure:
Memorandum of Understanding

cc: The Honorable Manuel Lujan, Jr.

Copies of the MOU will also be sent to:

HOUSE OF REPRESENTATIVES:

1. The Honorable Richard L. Ottinger
   Chairman, Subcommittee on Energy Conservation and Power
   Committee on Energy and Commerce

   cc: The Honorable Carlos J. Moorhead

2. The Honorable Toby Moffett
   Chairman, Subcommittee on Environment, Energy and Natural Resources
   Committee on Government Operations

   cc: The Honorable Joel Deckard

3. The Honorable Tom Bevill
   Chairman, Subcommittee on Energy and Water Development
   Committee on Appropriations

   cc: The Honorable John T. Meyers

SENATE:

1. The Honorable Mark O. Hatfield
   Chairman, Subcommittee on Energy and Water Development
   Committee on Appropriations

   cc: The Honorable J. Bennett Johnston, Jr.

2. The Honorable James McClure
   Chairman, Committee on Energy and Natural Resources

   cc: The Honorable Henry Jackson

3. The Honorable Alan K. Simpson
   Chairman, Subcommittee on Nuclear Regulation
   Committee on the Environment and Public Works

   cc: The Honorable Gary Hart

4. The Honorable Charles Percy
   Chairman, Subcommittee on Energy, Nuclear Proliferation and Government Processes
   Committee on Governmental Affairs

   cc: The Honorable John Glenn

PENNSYLVANIA DELEGATION:

1. Senator Arlen Specter
2. Senator John Heinz
3. Representative Allen Ertel
4. Representative William Goodling
5. Representative Robert Walker