NUCLEAR REGULATORY COMMISSION ISSUANCES

July 1997

This report includes the issuances received during the specified period from the Commission (CLI), the Atomic Safety and Licensing Boards (LBP), the Administrative Law Judges (ALJ), the Directors' Decisions (DD), and the Decisions on Petitions for Rulemaking (DPRM).

The summaries and headnotes preceding the opinions reported herein are not to be deemed a part of those opinions or have any independent legal significance.

U.S. NUCLEAR REGULATORY COMMISSION

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MASTER
COMMISSIONERS

Shirley A. Jackson, Chairman
Greta J. Dicus
Nils J. Diaz
Edward McGaffigan, Jr.

B. Paul Cotter, Jr., Chief Administrative Judge, Atomic Safety & Licensing Board Panel
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ATOMIC SAFETY AND LICENSING BOARD PANEL

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*Permanent panel members
In the Matter of

INTERNATIONAL URANIUM (USA) CORPORATION
(White Mesa Uranium Mill)

Docket No. 40-8881-MLA
(ASLBP No. 97-726-03-MLA)
(Re: License Amendment)
(Alternate Feed Material)

Even after receiving detailed guidance from the Presiding Officer, Petitioners have not filed pleadings that demonstrate an injury in fact resulting from the proposed license amendment. They are, therefore, not entitled to a hearing.

ENVIRONMENT: ENVIRONMENTAL JUSTICE

A uranium mill requested a license amendment to receive a different kind of feedstock material without any increase in the amount of radioactive material processed or disposed of. An allegation by some native American neighbors that they have been discriminated against by the license amendment does not demonstrate any improper discrimination against them.
MEMORANDUM AND ORDER
(Declining a Hearing)

Memorandum

There is little reason to suspect, based on the pleadings, that the requested license amendment would result in any harm to health and safety or to the environment. There is, however, an important issue of communication because the information available to the public in this case does not indicate the composition of the "Cotter Concentrate" that is the nexus of the complaint of the Native American Petitioners. This problem may be solved, even though the petitions for a hearing are denied.

The Native American Petitioners have not accepted the clear invitation to establish the basis for granting standing to them. In this case, which involves an amendment to an operating license, it is incumbent on Petitioners to show how they are harmed by the amendment. Although I have provided guidance to them about how to do that, they have not responded adequately to the guidance. Consequently, the request for a hearing is denied. Petitioners may appeal this determination to the Commission.

In the absence of a hearing, the Staff of the NRC and International Uranium (USA) Corporation might consider providing information to assure the Petitioners and the public that mixed wastes are not being processed or stored at White Mesa.

I. PROCEDURAL HISTORY

This proceeding involves a challenge to a license amendment that was issued by the Staff of the Nuclear Regulatory Commission (Staff) on April 2, 1997. The amendment permits the receipt and processing of alternate feed material (i.e., material other than natural ore) at Licensee's White Mesa Uranium Mill located near Blanding, Utah. See 10 C.F.R. Part 40, Appendix A, which sets forth several design criteria and requires that licensing decisions "take into account the risk to the public health and safety and the environment with due consideration to the economic costs involved . . ."; 40 C.F.R. Part 192, Subparts D and E. See also the following nonbinding Staff guidance: "Final Position and Guidance on the Use of Uranium Mill Feed Material Other Than Natural Ores," 60 Fed. Reg. 49,296 (Sept. 22, 1995).

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The following requests for a hearing or for participation in a hearing have been filed:

2. Mr. Norman Begay, April 30, 1997. Mr. Begay writes on behalf of himself and his community.

The Staff filed its response on May 21, 1997 (Staff Response). Subsequently, I issued LBP-97-10, 45 NRC 429 (1997). That decision accepted the Staff Response, even though it was untimely. Pursuant to that decision, the following filings also have been received:

1. Native American Petitioners, by Norman Begay (White Mesa Utes), Lula Katso (Westwater Navajo Community), and Winston Mason (Native American Peoples Historical Foundation, Inc., Great Avikan House), June 6, 1997 (Supplemental Petition).

II. BASIS OF STAFF ACTION

A. The Technical Evaluation Report (TER)


In the TER, at 2, the Staff concluded that the feed material did not contain hazardous waste. The following language in the TER is, however, difficult to understand and appears to be lacking a full explanation of its legal and
factual basis, perhaps because the request for an amendment redacted or omitted
information claimed to be proprietary:\footnote{See Request to Amend Source Material License SUA-1358, White Mesa Mill Docket No. 40-8681, rev.
March 5, 1997. This material is Attachment 2 to the Request for Standing faxed to the NRC on April 16, 1997,
by the Native American People's Historical Foundation.}

Under the alternate feed guidance, \textit{proposed feed material which contains a listed hazardous
waste will not be approved by the NRC staff for processing at a licensed mill.} Feed materials
which exhibit only a characteristic of hazardous waste (i.e., ignitability, corrosivity, reactivity,
or toxicity) would not be regulated as hazardous waste and could therefore be approved by the
staff for recycling and extraction of source material. However, this does not apply to residues
\textit{from water treatment}. Therefore, NRC staff acceptance of such residues as feed material
would depend on their not containing any hazardous or characteristic [sic] hazardous waste.

The uranium-bearing material's owner has determined that the material does not contain a
listed hazardous waste. However, \textit{the material does exhibit two characteristics of hazardous
waste: corrosivity (due to a pH in excess of 12.5) and toxicity due to selenium concentrations
above the Toxicity Characteristic Leaching Procedure [TCLP] regulatory threshold}. The
material's owner has addressed these findings with the State Department of Environmental
Protection (DEP) in the state in which the material is located. The State DEP, which has
been granted final authorization from the U.S. Environmental Protection Agency for the
State-administered Resource Conservation and Recovery Act (RCRA) program, concurred
in the material owner's determination. Copies of the correspondence between the material
owner and the State DEP were provided with the amendment application: \textit{the NRC staff
has reviewed this correspondence and finds the uranium-bearing material, while exhibiting
characteristics of hazardous waste, does not contain a listed hazardous waste.}

\textit{The NRC Staff has determined also that the uranium-bearing material is not a residue from
water treatment.}

Therefore, the NRC staff considers the uranium-bearing material acceptable for recycling
and extraction of source material.

\[\text{[Emphasis added.]}\]

Whether or not this waste is hazardous is not merely an academic concern.
The Native American People state, at 2 of their Supplemental Petition (citing,
in Attachment C, slides purportedly presented on April 2, 1997, by Colleen
O’Laughlin, the Department of Energy's [DOE's] Project Manager for the Cotter
Concentrate Project):

\begin{quote}
The amendment covers 790,000 pounds of “Cotter Concentrate,” defined as “Mixed Waste
Containing Radionuclides and Hazardous Constituents, comprising Eight-eight percent of
NTS current Mixed Waste Inventory.”
\end{quote}

Lula Katso, spokesperson for the Westwater Navajo Community, wrote, at 1 and
2 of a letter of June 7, 1997, that:
The leach fields might drain down into the canyon water and to the river.

The Supplemental Petition stated, in Attachment I, ¶19, without citing any authority:

It is [our] . . . understanding that the contents of the Cotter Concentrate include radionuclides and hazardous constituents, some of which are heavy metals, organic wastes and plutonium-244.

The filings indicate that there may be credible reasons for a finding of the nonhazardous nature of the Cotter Concentrate. As previously mentioned, the NRC treated much of the data about the Cotter Concentrate as proprietary, however, and kept it confidential. Therefore, the information is not publicly available. Some public statements, including one made by the NRC before the Utah Radiation Control Board, May 9, 1997 (Supplemental Petition, Appendix H, at 2, ¶9), are equivocal as to whether the Cotter Concentrate is hazardous corrosively and toxicologically. The NRC has said, relying primarily on a health physicist, whose expertise may be limited to radiation safety:

Prior to submitting the request for the license amendment, Energy Fuels conducted an analysis of the issue and concluded the Cotter Concentrate does not present any unique or extraordinary safety issues. The NRC agreed that the material can be processed without posing additional risk or impacts to the environment, Energy Fuels' employees or the public's health and safety. The safety of the processing was confirmed independently by a health physicist. He reviewed the potential health and environmental impacts that may be associated with the processing of the Cotter Concentrate. The physicist found that the data demonstrated conclusively that the material has no potential to increase any radiation risk to the general public or the environment. The company is taking all of the radiation safety precautions to protect their employees, the public and the environment.

[Emphasis added.]

B. Conclusion

After reading the Staff’s materials, I conclude that it is impossible for me to ascertain the basis for the Staff determination that this material is not hazardous. The basis is not found either in the TER or in any other material filed with me. In particular, I do not know the composition of this material, how hazardous it is, or how a determination was made that the material “is not a residue from water treatment.” Since I cannot make these determinations, I understand the concerns of the Native American Petitioners, whose fears cannot at this time be properly addressed by available facts.

3 White Mesa Mill was acquired from Energy Fuels Nuclear, Inc., by IUSA.
Determining whether this material is hazardous is crucial to the consideration of the health and safety aspects of the concerns of the Native American Petitioners. Hence, the Staff and IUSA may choose voluntarily to supply the legal and factual basis for this determination to the Petitioners and the public.

III. CONCERNS: INJURY IN FACT

A. The Law of the Case

Above, I have just stated a concern about public information about the Cotter Concentrate. Nevertheless, the Native American Petitioners have not complied with NRC requirements for a hearing, including:

- They have not stated whom they represent.
- They have not stated in a sworn statement where any of the represented individuals reside or how far they reside from the alleged threat from the Cotter Concentrate.
- They have not provided a plausible scenario concerning how they may suffer health or safety consequences from the Cotter Concentrate.\(^4\)

An earlier decision in this case, LBP-97-10, 45 NRC at 431 states that “One way or another, a petitioner must show the specific injury that is feared and how that injury might occur.” It also states, at 431, that:

To show standing, an individual or an organization must show how they may be harmed (“injury in fact”) by the amendment.\(^5\) It is typical in our proceedings that an individual would submit an affidavit concerning where they live and how far that is from the proposed activity. An organization typically would file an affidavit showing that its interests as an organization will be injured or that a particular person or group of people, whom it is authorized to represent, live in particular addresses, stating how far they live from the proposed activity.

B. State of the Record

It is a puzzle that the straightforward requirements of the law have been largely ignored even after effort has been expended to make the requirements understandable.\(^6\) What Petitioners’ filings lack even now is:

\(^4\) Alleged future events, such as bringing wastes from “Fernald and other DOE sites,” are not relevant to this license request. Our attention is limited to the alleged evils of this license amendment and this day.

\(^5\) “The requirement of ‘injury in fact’ must not be taken literally. It is fulfilled by demonstrating that there is reason to believe an accident may occur. Curators of the University of Missouri, LBP 90-18, 31 NRC 559, 566 (1990). Note that this Subpart L case interprets “injury in fact” in light of the extent to which facts may be available to a petitioner.”

\(^6\) The Staff Supplemental Response, at 3-12, is a scholarly approach to the subject of standing as previously interpreted in this case.
1. The specific address of a person on whom the group relies in proving that it is placed at risk by the proposed license amendment.

2. The names of the people who are members or are otherwise represented by the group and how they have authorized representation. A precise description of the geographical areas in which these members or represented people reside or live.

3. At least some superficial information about the paths that surface water or streams take in the area and the reason to believe that represented individuals are at risk despite the precautions and monitoring undertaken under the license to which this amendment is requested.

4. The distance that pollution would have to travel to cause physical injury to represented individuals. This could be measured along water or atmospheric pathways.

5. Specifications of reasons to believe in the inadequacy of the precautions taken by IUSA to prevent water and air pollution.

It is my conclusion, after reviewing the last section of the TER, that this amendment makes very little substantive change in milling or tailing-disposal operations, making it difficult for Petitioners to show “injury in fact.” The Staff found, at 3-4 of the TER, that:

[T]he processing of this material will not result in (1) a significant change or increase in the types or amounts of effluents that may be released offsite; (2) a significant increase in individual or cumulative occupational radiation exposure; (3) a significant construction impact; or (4) a significant increase in the potential for or consequences from radiological accidents. This conclusion is based on the following information:

a. Processing of this material will not result in the currently-approved annual yellow-cake production limit of 4380 tons being exceeded.

b. No physical changes to the mill circuit are required to process this material.

c. Processing this material will not require EBN [or IUSA] to enlarge its tailings' disposal facilities.

d. Trucks transporting the material to the mill site will be surveyed and decontaminated, as necessary, in accordance with EBN [OR IUSA]'s procedures, before leaving this site.

e. Employees involved in handling the material will be provided with personal protective equipment.

C. Pleadings of the Native American Petitioners

Mr. Begay comes closest to alleging a ground for standing. He states:

Our Community and our water wells lie adjacent to, as well as downstream and downwind from the EBN [OR IUSA] Mill. The radionuclides which make up the Cotter Concentrate
originally came from Belgium Congo Ore containing approximately 60% Uranium, and now still contain 10% Uranium. Not only does this hazardous waste contain extremely high radioactivity and radon gas properties, but each time it is processed it adds further harmful constituents, which are perhaps more immediately dangerous to human health than the radio-nuclides. According to reports, your agency, and the Department of Energy have stated that DOE is unable to stabilize the Cotter Concentrate. Therefore, on the basis of concerns for the health and safety of myself, my family, and my community, I ask for standing to argue against bringing these contaminants to the White Mesa Mill.7

Mr. Begay, however, writes from a post office box and does not provide his residential home address, a statement of how he is authorized to represent other Ute citizens, or the residence of any Ute citizen. Nor does his concern show an injury in fact resulting from the amendment, as contrasted with continuing operations of the mill under its existing license. So Mr. Begay fails to provide a basis for standing, either for his organization or himself.

Lula Katso, who is styled as “Spokesperson for Westwater Navajos,”8 does not provide a residential address, a statement of authorization to represent other Navajo citizens, or the residence of any represented person. Lula Katso thus fails to show “injury in fact” or any basis for standing, either for the Westwater Navajos or personally.

Mr. Winston M. Mason, Head of Council of Great Avikan House, uses the address of the Native American Peoples Historical Foundation. He does not provide his own residence or the residence of any member of the Historical Foundation. Nor does he state the distance from White Mesa of the Native American Peoples Historical Foundation or any plausible explanation of how it might be harmed. He fails to provide a basis for standing, either for his organization or himself.

D. Environmental Justice

I conclude that, contrary to the position of the Native American Petitioners, the Executive Order 12898, “Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations” (1994) is not applicable. This case is about continued operation of a site that has already been licensed. It is my responsibility to evaluate the petitions and to ensure that health and safety is protected. There is no reason to think that this action could discriminate against Native Americans. 59 Fed. Reg. 7629.

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8See Lula Katso’s letters of June 7, 1997, and April 30, 1977, appearing as attachments at the front of the Native American’s Supplemental Petition.
E. Spiritual and Psychological Effects

The Native American Petitioners have expressed profound concerns about the effect of the placement of the Cotter Concentrate near their ancestral burial grounds. While this argument strikes a responsive chord, it does not invoke any legal authority, and I know of no such authority. The Atomic Energy Act and the National Environmental Policy Act are concerned with public health and safety and harm to the human environment. See PANE v. NRC, 678 F.2d 222, 249-53 (D.C. Cir. 1982), and Metropolitan Edison Co. v. PANE 460 U.S. 766, 772-79 (1983).

IV. NEGOTIATION

The Presiding Officer would be pleased to facilitate productive discussions among the parties. While the case is pending, this should be done in an open forum. After the time for appeal expires, if the case is no longer active, the facilitation could, with special approval of the NRC, occur at private meetings.

Order

For all the foregoing reasons and upon consideration of the entire record in this matter, it is, this 23rd day of July 1997, ORDERED that:

1. Pursuant to 10 C.F.R. § 2.1205(n), the decision to deny the petitions to intervene is appealable to the United States Nuclear Regulatory Commission within ten (10) days of service of this Order of the Presiding Officer.

2. A petition for review and a response to a petition for review must meet the requirements of 10 C.F.R. § 2.786(b)(2)-(6).

3. Pursuant to 10 C.F.R. § 2.771, a petition for reconsideration of a final decision may be filed by a party within (10) days after the date of the decision. The petition for reconsideration shall state specifically the respects in which the final decision is claimed to be erroneous, the grounds of the petition, and the relief sought.

4. Under 10 C.F.R. § 2.734,9 a party may file a motion to reopen a closed record to consider additional evidence. The motion must be timely, must address a significant safety or environmental issue, and must demonstrate that

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9 This section is contained in Rules of General Applicability and appears to have no parallel section in 10 C.F.R. Part 2, Subpart L.
a materially different result would be likely had the newly proffered evidence been considered initially.

Peter B. Bloch, Presiding Officer
ADMINISTRATIVE JUDGE

Rockville, Maryland
MEMORANDUM AND ORDER
(Terminating Proceeding)

This proceeding involves the application of Northern States Power Co. (Applicant) for a license for an Independent Spent Fuel Storage Installation (ISFSI) at an away-from-reactor site. The Applicant on July 22, 1997, wrote the NRC Staff withdrawing its license application and, by motion dated July 24, 1997, has moved to terminate this proceeding.

By Memorandum and Order (Motion to Suspend Proceeding), dated December 3, 1996, LBP-96-26, 44 NRC 406, we granted the Applicant’s motion to suspend this proceeding pending the outcome of State-court litigation concern-
ing the ISFSI site. At the time, several petitions for leave to intervene had been filed. We had not yet ruled on contentions — indeed, we cancelled a forthcoming prehearing conference designed to consider, inter alia, various Petitioners’ proposed contentions. Accordingly, no Notice of Hearing has been issued or could appropriately have been issued prior to the suspension.

In filing its termination motion, the Applicant advises that the State-court litigation is now complete and that it need not continue seeking a license for the proposed ISFSI. Under 10 C.F.R. § 2.107(a), we have authority to grant a motion to terminate a proceeding. Where, as here, a Notice of Hearing has not been issued, it is inappropriate for us to evaluate or impose conditions on the termination. Public Service Co. of Indiana (Marble Hill Nuclear Generating Station, Units 1 and 2), LBP-86-37, 24 NRC 719, 724 (1986). That being so, we are granting the Applicant’s motion to terminate without seeking the views of various parties or Petitioners for intervention.

Pursuant to 10 C.F.R. § 2.760 of the Commission’s Rules of Practice, this Memorandum and Order will constitute the final decision of the Commission forty (40) days from the date of its issuance, unless a petition for review is filed in accordance with 10 C.F.R. § 2.714a or the Commission directs otherwise.

IT IS SO ORDERED.

THE ATOMIC SAFETY AND LICENSING BOARD

Charles Bechhoefer, Chairman
ADMINISTRATIVE JUDGE

Thomas D. Murphy
ADMINISTRATIVE JUDGE

Frederick J. Shon
ADMINISTRATIVE JUDGE

Rockville, Maryland
July 30, 1997
Directors' 
Decisions 
Under 
10 CFR 2.206
UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

OFFICE OF NUCLEAR REACTOR REGULATION

Samuel J. Collins, Director

In the Matter of

MAINE YANKEE ATOMIC POWER
COMPANY and
YANKEE ATOMIC ELECTRIC
COMPANY
(Maine Yankee Atomic Power Station)

Docket No. 50-309
July 30, 1997

The Director of the Office of Nuclear Reactor Regulation grants in part a petition dated August 19, 1996, submitted to the Nuclear Regulatory Commission by Patrick M. Sears (Petitioner). The petition requests that the NRC: (1) fine Maine Yankee Atomic Power Company (MYAPCO) and Yankee Atomic Electric Company (YAEC) if records regarding use of the computer code RELAPSYA have not been kept in accordance with YAEC’s computer code quality assurance procedures, and (2) inspect all users of RELAP and fine those users not operating within required computer code verification procedures.

Because there is no basis to conclude that the problems identified with the RELAP5/MOD1 vintage ECCS code used by MYAPCO are or may be present in the different RELAP code vintages at other NRC-licensed plants, because the two other users of the RELAP5/MOD1 vintage code have been inspected or are permanently shut down, and because the NRC will conduct computer code inspections of selected NRC licensees and vendors, not limited to users of RELAP, Petitioner’s first request is granted in part. By virtue of the NRC Staff’s previous and current inspection and review activities, Petitioner’s second request is granted in part.
DIRECTOR’S DECISION UNDER 10 C.F.R. § 2.206

I. INTRODUCTION

On August 19, 1996, Patrick M. Sears (Petitioner) filed a petition with the U.S. Nuclear Regulatory Commission (NRC) pursuant to section 2.206 of Title 10 of the Code of Federal Regulations (10 C.F.R. § 2.206). Petitioner requested the NRC to (1) fine Maine Yankee Atomic Power Company (MYAPCO) and Yankee Atomic Electric Company (YAEC) if records regarding use of the computer code RELAP5YA have not been kept in accordance with YAEC’s computer code quality assurance (QA) procedures, and (2) inspect all users of RELAP and fine those users not operating within required computer code verification procedures.

As the basis for these requests, the petition states that (1) the May 5, 1989 oral statement of Steve Nichols, then licensing supervisor of MYAPCO, to Petitioner, then NRC Project Manager for Maine Yankee Atomic Power Station (MYAPS), that RELAP5YA was “operable” and would be used for subsequent reloads was false; (2) no computer code inspections were performed by NRC before a 1992 inspection at YAEC by Mr. Sears, and not again until 1995; (3) when Mr. Sears was in the Vendor Inspection Branch, he was told not to do any more computer code inspections; (4) RELAP is widely used; (5) RELAP has been shown to have serious deficiencies; and (6) the RELAP problem is not confined to the MYAPS but is endemic to the industry as a whole.

On September 24, 1996, Mr. William T. Russell, then Director of the Office of Nuclear Reactor Regulation, acknowledged receipt of the petition. By letter dated April 14, 1997, Petitioner supplemented his petition by correcting his characterization of Mr. Nichols’ comment, substituting the word “operational” for “operable.”

II. BACKGROUND

As a result of concerns regarding small-break loss-of-coolant accident (SBLOCA) analyses of emergency core cooling systems (ECCS) raised by the 1979 accident at Three Mile Island Unit 2, and pursuant to 10 C.F.R. § 50.54(f), the NRC required licensees to submit revised, documented SBLOCA analyses which were to meet the guidance provided in NRC’s “Clarification of TMI Action Plan Requirements” (NUREG-0737 or TMI Action Plan), Items II.K.3.30 and II.K.3.31. In response to the guidance of Item II.K.3.30, on January 14, 1983, Maine Yankee submitted a report, YAEC-1300P, “RELAP5YA: A Computer Program for Light Water Reactor System Thermal-Hydraulic Analysis” to the NRC. In January 1989, the NRC approved RELAP5YA for use by Maine
Yankee as a 10 C.F.R. Part 50, Appendix K evaluation model, acceptable to
demonstrate compliance with the requirements of 10 C.F.R. § 50.46, “Accept-
tance criteria for emergency core cooling systems for light water nuclear power
reactors.” RELAP5YA is a generic, non-plant-specific LOCA computer code
for calculating ECCS performance over the small-break portion of the break
spectrum.

Item II.K.3.31 of the TMI Action Plan states that licensees are to submit
plant-specific calculations using the SBLOCA evaluation model approved by
the NRC pursuant to Item II.K.3.30. In response to TMI Action Plan Item
II.K.3.31, YAEC prepared for Maine Yankee a plant-specific Appendix K
RELAP5YA SBLOCA evaluation model analysis and prepared a report in June
1993 identified as YAEC-1868: “Maine Yankee Small Break LOCA Analysis.”
The SBLOCA analysis described in YAEC-1868 was used to prepare Core
Performance Analysis Reports (CPARs) which were submitted to the NRC as
part of Maine Yankee’s reload analyses for Cycle-14 and Cycle-15 operations,
and was the SBLOCA analysis of record throughout Cycle-14 operations; it
was not used during Cycle-15 operations because of the intervening January
3, 1996, “Confirmatory Order Suspending Authority for and Limiting Power
Operation and Containment Pressure (Effective Immediately), and Demand for

On December 4, 1995, the NRC received allegations that, among other
things, YAEC, acting as agent for the Licensee, knowingly performed inadequate
analyses of the emergency core cooling system (ECCS) to support two license
amendment applications to increase the rated thermal power at which MYAPS
operates to 2630 MWt, and then to 2700 MWt. It was further alleged that YAEC
management knew that the ECCS for Maine Yankee, if evaluated in accordance
with section 50.46, using the RELAP5YA SBLOCA evaluation model, did not
meet licensing requirements.

In response to the allegations, NRC dispatched an Assessment Team to YAEC
headquarters between December 11 and 14, 1995, to examine, among other
things, SBLOCA analyses, especially the SBLOCA analysis which supported
the Licensee’s operating Cycle-15 reload application. Based on the Assessment
Team review, and a meeting held with the Licensee on December 18, 1995, the
NRC Staff issued its January 3, 1996 Order. The Order concluded, inter alia,
that the Licensee had not demonstrated that computer code RELAP5YA would
reliably calculate the peak cladding temperature for all break sizes in the small-
break LOCA spectrum for Maine Yankee and that, for a variety of reasons, the
plant-specific application of RELAP5YA did not conform to the requirements

¹ Among other things, the Order limited operation of MYAPS to 2440 MWt, pending NRC review and approval
of a plant-specific SBLOCA analysis that conforms to TMI Action Plan Items II.K.3.30 and II.K.3.31 and that
meets the requirements of section 50.46.
of section 50.46 and thus was not acceptable for use by the Licensee. The Order required the Licensee to submit a SBLOCA analysis specific to Maine Yankee for operation at power levels up to 2700 MWe, which must meet the requirements of section 50.46, and which must conform to the guidance of NUREG-0737, Items II.K.3.30 and II.K.3.31, “SBLOCA Methods” and “Plant-Specific Analysis,” respectively, and NUREG-0737, Item II.K.3.5, “Automatic Trip of Reactor Coolant Pumps During LOCA.” The Order suspended authority to operate Maine Yankee at 2700 MWe maximum power and limited power to 2440 MWe, pending NRC review and approval of the required SBLOCA analysis. MYAPCO submitted the required SBLOCA analysis specific to Maine Yankee on April 25, 1996, and the NRC Staff is currently reviewing it.

The NRC also initiated an investigation by the NRC Office of Investigations (OI) to examine possible wrongdoing. The NRC Staff is currently reviewing the results of that investigation.

III. DISCUSSION

A. Do MYAPCO and Other NRC Licensees Who Use RELAP Operate Within Required Computer Code Verification Procedures?

Petitioner requests that the NRC inspect all users of RELAP and fine those users not operating within required computer code verification procedures. The Staff presumes that the phrase “required computer code verification procedures,” as used by Petitioner, means the conditions, if any, of the NRC’s approval of the computer code, as well as the Licensee or vendor quality assurance (QA) procedures pursuant to 10 C.F.R. Part 50, Appendix B.

There are many vintages of RELAP, which was developed by Idaho National Engineering Laboratory, such as RELAP4, RELAP5/MOD1, RELAP5/MOD2, and RELAP5/MOD3 (higher suffix numbers indicate more current vintages). Major improvements were made in each new vintage, including the use of more sophisticated modeling of two-phase flow. For example, RELAP5/MOD1 has a “mixture” model with five governing equations, whereas RELAP5/MOD2 has a full two-fluid treatment with six equations.

Each vintage of RELAP has many versions, representing primarily modifications in supporting models on constitutive relationships and corrections of errors. Idaho National Engineering Laboratory maintains a reporting system for problems discovered by users of the code, which are prioritized and referred to the code development staff for resolution. Therefore, it cannot be assumed that a problem with a particular RELAP vintage or version also exists in other RELAP vintages or versions.

Vendors or licensees who use RELAP codes to support license applications normally take a specific vintage or version of RELAP and create their own
variations by making modifications and adding certain features, such as those required by 10 C.F.R. Part 50, Appendix K. The RELAP codes used by different vendors and licensees are not necessarily developed from the same versions or vintages of RELAP. For example, the RELAP5YA code used by YAEC for Maine Yankee SBLOCA analysis was derived from RELAP5/MOD1, while most other RELAP codes used for the ECCS analyses of NRC-licensed nuclear plants were derived from different vintages, namely, RELAP4 or RELAP5/MOD2.

Before a vendor-modified or licensee-modified RELAP code is used for licensing applications, it must be reviewed and approved by the Staff. The Staff’s review and approval will require, among other things, benchmark comparison of the code’s predictions against experimental test data. In many cases, the Staff’s approval of a licensing RELAP code imposes conditions or restrictions for application of the code to ensure that licensing calculations are acceptably conservative, in accordance with the requirements of section 50.46 and Appendix K to Part 50. The implementation by a licensee or vendor of an approved emergency core cooling system (ECCS) code is controlled by the licensee’s or vendor’s own quality assurance programs in accordance with Appendix B to 10 C.F.R. Part 50.

In view of the above, it cannot be presumed that all other vintages of RELAP codes used by the industry have the same deficiencies as those experienced by Maine Yankee with its particular vintage of RELAP, that is, RELAP5/MOD1. Two NRC licensees other than Maine Yankee, however, used the RELAP5/MOD1 vintage, that is, Yankee Rowe Nuclear Power Station and Vermont Yankee Nuclear Power Station. Yankee Rowe Nuclear Power Station has been permanently shut down for decommissioning since October 1, 1991. In May 1996, the NRC Staff conducted an ECCS code and analysis inspection, and in June 1996, a special inspection of Vermont Yankee. As a result, the NRC issued a Notice of Violation and Proposed Imposition of Civil Penalty — $50,000 (EA 96-210) on August 23, 1996, for the licensee’s failure to assume a specific failure scenario in the LOCA analysis. In that enforcement action, the NRC Staff also concluded that Vermont Yankee’s corrective actions were prompt and comprehensive. With respect to Maine Yankee, the NRC Staff has examined MYAPCO’s use of RELAP5YA through the Assessment Team review and the OI investigation. The Staff’s evaluation of Maine Yankee’s use of RELAP5YA is ongoing with regard to any violations of NRC requirements, including section 50.46. The Staff will keep Petitioner informed by providing Petitioner with copies of publicly available inspection reports and enforcement actions.

Petitioner, nonetheless, correctly points out that the NRC Staff should conduct ECCS code and analysis inspections more frequently. In February 1997, the Staff’s Maine Yankee Lessons Learned Task Group provided its report to the Commission, “Report of the Maine Yankee Lessons Learned Task Group”
(Dec. 5, 1996), Attachment 1 to SECY-97-042, “Response to OIG Event Inquiry Regarding Maine Yankee” (Feb. 18, 1997). The Task Group identified a need to place additional emphasis on (1) audits and inspections of implementation by licensees and vendors of their ECCS codes and methodologies, not limited to the various RELAP codes, and (2) verification of the conformance by licensees and vendors with the conditions specified in the NRC Staff’s Safety Evaluation Reports as a basis for determining whether codes and methodologies conform with NRC requirements. The Task Group also addressed inspections pursuant to the Core Performance Action Plan, performed to assess the impact of reload core design activities on plant safety. Licensees or vendors found to be in violation of NRC regulations will be subject to enforcement actions.

As explained above, there is no basis to conclude that the problems identified with the RELAPS/MOD1 vintage ECCS code used by Maine Yankee are or may be present in the different RELAP code vintages at other NRC-licensed plants. Additionally, the two other users of the RELAPS/MOD1 code vintage have either been inspected (Vermont Yankee) or are permanently shut down (Yankee Rowe). Nevertheless, the NRC will conduct computer code inspections of selected NRC licensees and vendors, not limited to users of RELAP, as explained above.

In view of the above, Petitioner’s request to inspect all users of RELAP and to fine those users not operating within required computer code verification procedures is granted in part, since some users of RELAP will be included in forthcoming computer code inspections and since Maine Yankee and Vermont Yankee have already been inspected.

B. Have MYAPCO and YAEC Kept Records of the Use of the RELAP ECCS Computer Code in Accordance with YAEC’s Computer Code Quality Assurance Procedures?

Petitioner requests that the NRC fine MYAPCO and YAEC if records regarding use of the computer code RELAP5YA have not been kept in accordance with YAEC’s computer code quality assurance (QA) procedures. The NRC Staff’s review of the application of RELAP5YA for Maine Yankee between December 11 and 14, 1995, focused on the adequacy of the RELAP5YA SBLOCA analysis to support operation of Maine Yankee during Cycle 15. In particular, the Staff evaluated conformance of the code to SER conditions and compliance of the ECCS evaluation model with regulatory requirements. Although the Staff’s review did not focus on record-keeping requirements, the Staff did not identify instances in which the appropriate records had not been kept. The Staff is continuing its evaluation of RELAP5YA for compliance with other NRC requirements.

Siemens Power Corporation (SPC) has prepared a plant-specific SBLOCA ECCS evaluation model for Maine Yankee, which has been submitted by
Maine Yankee in response to the January 3, 1996 Order. The evaluation model is based on SPC’s ANF-RELAP SBLOCA methodology, which was originally approved by the NRC in 1989, with further modifications approved by the NRC in 1994. Between February 10, 1997, and April 4, 1997, the Staff conducted a four-week QA inspection of SPC. The inspection included a comprehensive review of documentation associated with SPC’s LBLOCA and SBLOCA ECCS evaluation models, including the approved ANF-RELAP SBLOCA methodology. The Staff’s findings associated with ANF-RELAP will be documented in the inspection report, which will be issued by the NRC in the near future. A copy of the inspection report will be provided to Petitioner when it is publicly available. In addition, the NRC Staff is currently performing a detailed technical review of the plant-specific ANF-RELAP ECCS evaluation model prepared by SPC for Maine Yankee, and submitted by Maine Yankee. The Staff’s evaluation of the plant-specific evaluation model will be documented in a Safety Evaluation Report (SER) when completed. The Staff concludes that these activities respond directly to the issues raised by Petitioner.

In view of the above, the Petitioner’s request for a QA inspection of Maine Yankee’s and YAEC’s use of RELAP is granted in part, by virtue of the Staff’s previous and current inspection and review activities. Additionally, the Staff will keep Petitioner informed by providing Petitioner with publicly available inspection reports, enforcement actions, and other documents as appropriate.

IV. CONCLUSION

As explained above, Petitioner’s request to inspect all users of RELAP and fine those users not operating within required computer code verification procedures is granted in part. Petitioner’s request to fine MYAPCO and YAEC if records regarding use of the computer code RELAP have not been kept in accordance with YAEC’s computer code quality assurance procedures is also granted in part.

A copy of this Director’s Decision will be filed with the Secretary of the Commission for Commission review in accordance with 10 C.F.R. § 2.206(c) of the Commission’s regulations. As provided by this regulation, this Director’s Decision will constitute the final action of the Commission 25 days after issuance.
unless the Commission, on its own motion, institutes review of the Decision within that time.

FOR THE NUCLEAR REGULATORY COMMISSION

Samuel J. Collins, Director
Office of Nuclear Reactor Regulation

Dated at Rockville, Maryland, this 30th day of July 1997.