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LBP-90-35
October 20, 1990

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

DOCKETED
USNRC

ATOMIC SAFETY AND LICENSING BOARD ^{90 OCT 22 P3:06}

Before Administrative Judge
Peter B. Bloch <sup>OFFICE OF SECRETARY
DOCKETING & SERVICE
BRANCH</sup>

In the Matter of

THE CURATORS OF
THE UNIVERSITY OF MISSOURI

(Byproduct License
No. 24-00513-32;
Special Nuclear Materials
License No. SNM-247)

Docket Nos. 70-00270
30-02278-MLA

RE: TRUMP-S Project

ASLBP No. 90-613-02-MLA

SERVED OCT 22 1990

MEMORANDUM AND ORDER
(Grant of Temporary Stay)

MEMORANDUM

[This memorandum contains some minor editorial changes made on October 22, 1990, two days after copies were issued by fax to the parties.]

I. Summary

After reflecting on Intervenors' Renewed Request for Stay Pending Hearing, October 15, 1990, and on the entire record of this case, I have decided that it is appropriate and necessary to treat that Request as seeking the lesser

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included remedy of a temporary stay, pursuant to 10 CFR § 2.1263.¹

At the outset of this case, as required by 10 CFR § 2.1263, Intervenor filed a request for a Stay. In LBP 90-18, 31 NRC 559, 575-77, 578 (1990), I deferred action on the Stay request.

Subsequently, Intervenor filed "Intervenor's Application for Temporary Stay to Preserve the Status Quo," August 20, 1990, and "Supplemental Memorandum," August 20, 1990. I denied that Application in LBP-90-30, 31 NRC _____, August 24, 1990. This Memorandum and Order may also be considered to be a reconsideration of LBP-90-30 in light of information now filed by Intervenor.

At this point, I am convinced that the grounds for a temporary stay are present and that a temporary stay should be granted. Among other things, Licensee has not filed an essential part of its Application demonstrating that it is in compliance with the Commission's Emergency Planning Rules or demonstrating that it is exempt from them. This omission has occurred because both Licensee and the Staff of the Nuclear Regulatory Commission apparently have misread the regulations. Whatever the reasons, I have concluded that

¹Although the motion does not mention a temporary stay to preserve the status quo directly, the referenced section (10 CFR § 2.1263) refers to 10 CFR § 2.788, which contains a provision for a temporary stay in extraordinary cases in subsection (g).

such an emergency plan or evaluation is necessary and that permitting the licensed activity to proceed in the absence of a showing that this requirement is met would unduly risk the public safety. In this instance, Intervenors have also shown by affidavit that the local fire battalion chief does not have a plan with which to combat a fire at the Alpha Laboratory, where the TRUMP-S experiments are taking place, and that he would respond to the scene but might stand-by while the laboratory burned.

Although this would be enough by itself to grant a temporary stay, Intervenors also have raised a serious question concerning whether Licensee has fully disclosed its full inventory of plutonium, including P-241, which may have a far higher curie content than the P-239 and P-240 isotopes whose curie content has been disclosed. As a consequence, Intervenors have raised a serious question that has not yet been answered by Licensee concerning whether Licensee is in compliance with the amended license that has been issued to it -- which permits it to possess a total of two curies of plutonium. A further serious issue with respect to P-241 is that Licensee appears not to have fully disclosed the isotopic content of the plutonium pursuant to 10 CFR § 70.22(a)(4); consequently, there may be another serious deficiency in its application -- itself a serious omission as well as casting doubt on the technical qualifications of the personnel who were seeking the license but did not fully

disclose the isotopic content of the material with which they were dealing.

Given the seriousness of the issue of accounting for the isotopic content of its plutonium, I would expect Licensee to have voluntarily suspended its experiments until it could at least be assured that it was in compliance with its license. Hence, I anticipate that the granting of the temporary stay prior to permitting Licensee an opportunity to respond will have only a minimal impact on its actual operations.

Licensee will be permitted to move for a dissolution of the temporary stay at any time. The earliest time a court reporter can be available is Monday afternoon, October 22.

II. Legal Authority

A. Authority to Issue a Temporary Stay

Pursuant to 10 CFR § 2.1263, I have authority to issue a stay. The terms of § 2.1263 refer me to § 2.788 for the standards governing the granting of a stay of the Staff's licensing action. Under that section, the criteria for determining whether or not to grant a stay are set forth in subsection (e). Additionally, subsection (g) permits me to grant a temporary stay in extraordinary cases, even without waiting for the filing of any answer.

In this case, it is my understanding that Licensee's work with the special nuclear materials americium, neptunium

and plutonium is ongoing. Whatever risks might accrue from this work are being accrued right now. Given that Intervenor's have met the criteria for a temporary stay, it is important that the NRC Staff's licensing action be stayed in order to maintain "the status quo" prior to licensing. 10 CFR §§ 2.1263, 2.788(g).

B. Applicable NRC Regulations

10 CFR §§ 30.33(a)(2) and 70.23(a)(3) require that, "The Licensee's proposed equipment and facilities are adequate to protect health and minimize danger to life or property." Section 30 applies to byproduct materials licenses and Section 70 to special nuclear material licenses.

10 CFR §§ 20.105 and 20.106 limit the extent to which Licensee may release neptunium or plutonium into the air or water in excess of natural background radiation. Additionally, Licensee must keep releases of radiation As Low As Reasonably Achievable (ALARA). 10 CFR § 20.1(c).

In addition, since the License covers the use of 25 curies of americium, it is subject to the requirements of 10 CFR §§ 30.32(i)(1) and 30.72. Those sections, in Schedule C, exempt from their provisions use of two or fewer curies of americium. Hence, since 25 is more than two, Intervenor's seem to be correct in arguing that the license application must either contain an emergency plan or an

evaluation demonstrating that the maximum dose to a person offsite is within permissible limits.²

VII. Arguments

A. Intervenors' Arguments

Intervenors' arguments are supported by impressive factual testimony by a panel of experts (TRUMP-S Review Panel) consisting of:

- James C. Warf, Professor Emeritus of Chemistry at the University of Southern California and former Group Leader of the Analytic and Inorganic Chemistry Sections of the Manhattan Project.
- Daniel Hirsch, former Director of the Adlai E. Stevenson Program on Nuclear Policy, a research and teaching program on nuclear matters at the University of California, Santa Cruz. In 1986, he was appointed by the NRC to an advisory committee on Containment Performance Design Objectives. Subsequently, he was asked by the Subcommittee on General Oversight and Northwest Power of the Interior Committee of the U.S. House of Representatives to assemble a panel of experts to inspect and review the safety of the Hanford N-reactor, which subsequently was closed in keeping with the panel's recommendation.
- Sheldon C. Plotkin, a consulting safety engineer specializing in accident analysis.

²"Written Presentation of Arguments of Intervenors and Individual Intervenors", October 15, 1990 (Written Presentation) at 28.

I note that Intervenors also have argued (Written Presentation at 16-19) that Licensee is subject to 10 CFR § 70.22 (i)(1), which requires a similar showing with respect to plutonium in excess of 2 curies in unsealed form. Hence, Licensee either would need an emergency plan or to conduct an analysis that included all the covered materials on site, showing that the maximum combined dose to a member of the public would not exceed "1 rem effective dose equivalent or an intake of 2 milligrams of soluble uranium."

- Miguel Pulido, a consulting mechanical engineer specializing in energy, ventilation, and airflow matters.
- Lowell Wayne, an environmental scientist and chemist specializing in the behavior of airborne pollutants.¹

I find that these experts appear to be well-qualified for the subjects they are covering and that their testimony seems well-organized and well-reasoned.

1. Need for Emergency Plan or Evaluation (10 CFR § 30.32(i)(1))

Intervenors correctly point out that Licensee's possession of 25 curies of Americium requires them to conduct an evaluation or to have an applicable emergency plan. The Declaration of the Trump-S Review Panel at 17-22 persuades me that Intervenors are likely to succeed on the merits of the following arguments:

- the only analysis of potential release fractions provided to me so far by Licensee is a "summary" of a study that does not exist and that does not provide adequate assurance of safety to the public;
- the assumptions in the "summary" are not conservative;
- emergency action is likely to be needed beyond 1 mile from the Alpha Laboratory;²

¹Declaration of Trump-S Review Panel at 2 (professional credentials attached).

²Declaration of Trump-S Review Panel at Table III, p. 21b; attached ANSI/ANS15.16 (1982), "Emergency Classes."

- the local fire department may respond to a fire but would not fight it.⁵

2. Need for Emergency Plan or Evaluation (10 CFR § 70.22(i)) and for Disclosure Concerning PU-241

10 CFR § 70.22(a)(4) requires that an application for a license include the name, amount, and specifications (including the chemical and physical form and, where applicable, isotopic content) of the special nuclear material. Regulatory Guide 10.3, which has suggestive force in this proceeding, requires in § 4.3:

. . . the special nuclear material requested should be identified by isotope; chemical or physical form; activity in curies, millicuries, or microcuries; and mass in grams. Specification of isotopes should include principal isotope and significant contaminants. [Emphasis added.]

The Declaration of the Trump-S Review Panel persuades me that Intervenors are likely to succeed on the merits of the following arguments:

- Licensee failed to disclose that there were other forms of plutonium present in its material other than just PU-239 and PU-240 and that those forms may contain curie amounts of other plutonium isotopes, not just millicuries or microcuries;
- the total curie content of plutonium possessed by Licensee, whether the source of the material be weapons grade plutonium or reactor grade plutonium, is substantially in excess of 2 curies;
- Licensee's personnel should have known that the curie content of its plutonium was far more than it

⁵Declaration of Henry Ottinger, Exhibit 2.

disclosed and this casts doubt on their competence.⁶

3. Use of Improperly Tested HEPA Filters

The Declaration of the Trump-S Review Panel, at 22-25, persuades me that Intervenors are likely to succeed on the merits of the following arguments:

- Licensee has not installed two DOP tested HEPA filters as required by industry practice, supported by DOE Order 6430.1A, § 1300-3.6, which references ASME N510;
- it is not proper to take credit for HEPA filters that are not DOP tested in place;
- in the event of a fire or explosion, it is not proper to take credit for HEPA filters whether or not they are DOP tested;
- a serious fire or explosion could result in substantial release of contamination directly to the environment.

B. Licensee's Arguments

Licensee has not had an opportunity to respond. However, in a telephone conference call held yesterday, Licensee admitted that it was subject to the provisions of 10 CFR § 30.32(i)(1) and that it had informed the Staff of that conclusion. Licensee will be permitted to respond at the earliest opportunity it chooses.

⁶Declaration of Trump-S Review Panel at 6-10.

C. Conclusion

The criteria for a stay are met.

As discussed above, the moving party has made a strong showing that it is likely to succeed on the merits. There are multiple possible grounds for success, as well as additional grounds for likely success that I have not discussed at this time because of the voluminous filing on which they are based.

I find that intervenors would be irreparably injured if a stay were not granted. It appears likely that Licensee has not complied with the licensing regulations. Hence, I conclude that its activities are unduly dangerous to public safety. The regulations are the standard of what is required for an adequate assurance of safety and at this time Licensee appears to be unlikely to demonstrate compliance. Hence, continuation of the licensed activities is unduly dangerous.

Although the granting of a stay will delay Licensee's work, the consequences are primarily financial. The NRC has traditionally placed safety concerns above financial concerns. Therefore, I do not find that the harm to the Licensee is adequate to offset the injury to the public.

I also find that the public interest lies in requiring strict compliance to NRC regulations before licensed activity takes place. In this case, the Staff of the Nuclear Regulatory Commission never prepared a safety analysis and

appears to have been incorrect in at least one aspect of the proper application of the regulations. Since there is no assurance of adequate protection of the safety of the public, the TRUMP-S experiment must not proceed.

I will permit Licensee to challenge this order at its earliest convenience. Hence, the damage to it may be limited should it be able to persuade me that my conclusions are incorrect.

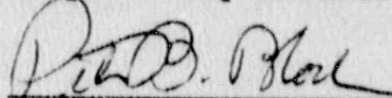
O R D E R

For all the foregoing reasons and upon consideration of the entire record in this matter, it is, this 20th day of October 1990, ORDERED, that:

Licensee shall immediately cease further experimentation with neptunium, americium or plutonium. It shall do so in a safe and reasonable manner, with due regard to safety.

An on the record telephone conference or other appropriate prehearing conference will be expeditiously arranged at Licensee's request to discuss dissolution of this temporary stay.

Respectfully ORDERED,



Peter B. Bloch
Presiding Officer

Bethesda, Maryland

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

In the Matter of

THE UNIVERSITY OF MISSOURI

Docket No. (s) 70-270/30-227B-MLA

(Special Nuclear Materials Lic. 247
Byproduct Mat. Lic. 24-00513-32)

CERTIFICATE OF SERVICE

I hereby certify that copies of the foregoing MEMO, AND ORDER GRANTING STAY have been served upon the following persons by U.S. mail, first class, except as otherwise noted and in accordance with the requirements of 10 CFR Sec. 2.712.

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Washington, DC 20555

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Administrative Judge
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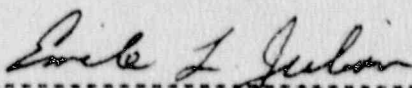
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Docket No. (s)70-270/30-2278-MLA
MEMO. AND ORDER GRANTING STAY

Robert L. Blake, Jr., M.D.
Physicians for Social Responsibility/
Mid-Missouri Chapter
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A. Bert Davis
Regional Administrator
U.S. Nuclear Regulatory Commission
Region III
799 Roosevelt Road
Glen Ellyn, IL 60137

Dated at Rockville, Md. this
22 day of October 1990



Office of the Secretary of the Commission