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UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD

Before Administrative Judge
Peter B. Bloch

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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

MEMORANDUM AND ORDER
(Dissolution of Stay)

MEMORANDUM

This is the fourth memorandum in this case in which I have addressed issues related to the granting of a temporary stay. The other memoranda are:

- LBP-90-30 (Temporary Stay Request), 31 NRC ____ (August 24, 1990);
- LBP-90-35 (Grant of Temporary Stay), 31 NRC ____ (October 20, 1990); and
- LBP-90-38 (Licensee's Partial Response Granting Temporary Stay).

In each of these decisions, I have addressed the information placed before me by the parties in light of the regulatory requirements concerning the granting of a temporary stay. In LBP-90-30, which was related primarily to

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the issue of HEPA filtration, Intervenor¹'s allegations were addressed by thoughtful affidavits filed by Licensee²; and I denied the request for a temporary stay. Then Intervenor¹ filed lengthy affidavits by their experts, whom they called the TRUMP-S review panel, and I issued LBP-90-35 granting a temporary stay and providing for Licensee to address the grounds for the stay as rapidly as they were able. During the time that they have been assembling their response, a stay was put into effect and kept in effect -- thus protecting the public because the information before me showed that the public would be exposed to an unacceptable risk, which I determined constituted irreparable injury.

LBP-90-38 was issued after Licensee made a partial response to the grounds for the temporary stay. The decision made findings favorable to the Licensee but continued the stay in effect until the final grounds for a temporary stay could be addressed by Licensee. Now that has occurred, and I conclude that the grounds for a stay are no longer present and that the stay should be dissolved.

While the Stay process is cumbersome and has produced the appearance of vacillation, it seems to me to be basically sound and even to be a tribute to the concern that the

¹The Missouri Coalition for the Environment, the Mid-Missouri Nuclear Weapons Freeze, Inc., the Physicians for Social Responsibility/Mid-Missouri Chapter, and ten individual intervenors.

²The Curators of the University of Missouri.

Nuclear Regulatory Commission shows for public safety. It is appropriate that activities should be suspended until evidence of irreparable injury can be properly rebutted. Until the rebuttal is submitted and found to be persuasive, there is no way to exclude the possibility that the activity itself is unduly dangerous.

In the process, there has been some injury to the efficiency and reputation of the Licensee. However, if the process is fully understood and the carefulness of Licensee's filings fully appreciated, the damage to its reputation should be mitigated.

I. Issues Related to HEPA Filters

In granting a temporary stay in LBP-90-35, I said (slip op. at 9-10):

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.

Licensee has now persuasively rebutted each of these grounds, which I shall discuss one at a time.

A. 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;

Licensee has submitted "Affidavit of Veryl G. Eschen Regarding Argon Glovebox Exhaust System," Licensee's Exhibit 7. Mr. Eschen has B.S. and M.S. degrees in Metallurgical Engineering and has worked for General Electric Company and Argonne National Laboratory, among others. He also has been associated with the utilization of DOE Order 6430.1A, "General Design Criteria" and in field investigations of glovebox systems, both at Rocky Flats plant. Exhibit 7 at 1-2. He appears to be a qualified engineer.

Mr. Eschen's affidavit persuades me that Licensee is likely to succeed on the merits of its argument that the one DOP filter in the Alpha Laboratory that cannot be DOP tested in place is an extra filter that is not required in order to meet the Department of Energy's single-failure criterion (and the general policy of this agency to require redundancy as a safeguard against accident).

The reason I accept at this time the argument that the single-failure criterion is met is that there appears to be

two exhaust paths from the glove box and either exhaust path contains two HEPA filters (counting each of the final, two-stage filter system as a filter). This seems to be sufficient. Licensee's Exhibit 7 at 2. Additionally, I find persuasive the Affidavit of Dr. J. Steven Morris Regarding Steppen Suggestions and Comments, Licensee's Exhibit 8, at 3 (§ 6) that it is common practice to have a HEPA filter in the exhaust outlet for a glove box and not to count that filter, which cannot be DOP tested, as a formal HEPA stage. Furthermore, I am assured by Dr. Morris's Affidavit, at pp. 4-8, that serious consideration was given to recommendations of Mr. Steppen and that there was nothing hasty or arbitrary in disregarding his advice that there was a major design flaw in the Alpha Laboratory.

B. It is not proper to take credit for HEPA filters that are not DOP tested in place;

This statement of Intervenors is correct. However, as I have just discussed above, Licensee has submitted evidence I am likely to accept on the merits that it is not counting or the HEPA filters that cannot be tested in place.

C. 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;

Dr. Leon Krueger, who is a Ph.D. chemist employed by MURR, with 20 years experience as a research chemist, has

submitted his Affidavit. Exhibit 5 at 1. He appears to be well-qualified. Dr. Krueger states, in the following numbered paragraphs:

10. Both the equipment in the Alpha Laboratory and the procedures for the TRUMP-S experiments were designed to reduce the possibility of a fire. The methods for minimizing fire hazards are based on avoiding the presence of (1) a fuel source, (2) an oxidizer, or (3) the minimal energy/ignition temperature that must be supplied to create a fire.

* * *

18. There are no explosives, gasoline, diesel fuel, kerosene, fuel oils, motor oils, alcohol, acetone or other flammable solvents or cleaning agents or natural gas piping systems housed inside the Alpha Laboratory.

In the remainder of his affidavit, Dr. Krueger discusses in detail the different items and tools that can be present in the Alpha Laboratory and presents his expert opinion concerning why each is not a credible source of fire.

Additionally, there is the Affidavit of Chester B. Edwards, Jr., Regarding the Adequacy of Alpha Laboratory Equipment, Fire-Related Features in the Alpha Laboratory and General Basement Area, and the Storage and Transfer of Actinide and Archived Materials, Licensee's Exhibit 4. Mr. Edwards is a career reactor operator who has been a licensed Senior Reactor Operator since 1968 and who was responsible for the design of the Alpha Laboratory. He states that the equipment in the Alpha Laboratory has been adequately inspected and tested. Id. at 3-5. He then states:

20. The Alpha Laboratory has been constructed so as to minimize combustibility of floor, walls and ceilings. . . .

* * *

31. As previously described the Alpha Laboratory was constructed to minimize the possibility of a fire spreading from within the Alpha Laboratory to the basement area. Even if this were to occur, the construction of the basement area is such that it would prevent the spread of a fire any further. The Alpha Laboratory is housed in the basement area outside containment. The reinforced poured concrete vault in which the Alpha Laboratory is housed has a 12 in. thick concrete floor, 8 in. thick concrete ceiling, and 16 in. thick concrete walls on the north, east, south and west. In effect, the Alpha Laboratory is entombed inside a concrete vault isolated from the rest of the facility.

These are important portions of Mr. Edwards affidavit.

However, I have reviewed the entire affidavit and find it to be thoughtful and persuasive.

The key affidavit on this point, however, is that of Dr. J. Steven Morris, Licensee's Exhibit 3. My reading of this affidavit, which analyzes literature in detail and reaches thoughtful, well-reasoned conclusions, prevents me from concluding that the Intervenor's are likely to succeed on the merits of their allegation that Licensee cannot take credit for a HEPA filter in the event of a fire or explosion. This is because I am likely to accept Dr. Morris's conclusion, at ¶ 43, that:

fire, with a loss of containment/confinement, is not a credible accident relative to the storage of, transit of, or experimentation with, the actinide materials at MURR. Therefore, any release of actinides from a fire would be filtered through the stack.

D. A serious fire or explosion could result in substantial release of contamination directly to the environment.

Because Licensee seems likely to prevail on the merits of its argument that fire with loss of containment is not a credible accident, I am likely to accept Dr. Morris's conclusion, at ¶ 52, that in the event of a hypothetical worst-case accident:

The doses at 100 meters resulting from a hypothetical worst-case accident at the MURR involving actinides are negligible. . . . Actual fractional release factors would be smaller than 1×10^{-6} and no credit is taken for effective emergency response (i.e., extinguishing the fire before the entire working inventory is consumed).

In lay terms, Dr. Morris is testifying that in the event of a worst-case fire incident involving experimental materials, less than one-millionth of the materials involved could be expected to be released to the environment.

I am also completely unable to accept the suggestion of the TRUMP-S panel that the release fraction should be treated as 3%. That suggestion is born of the Chernobyl experience, which resulted from a run-away reactor and a graphite fire. Furthermore, Dr. Morris states that even in that event, which lasted for over 10 days, there was considerably less than 3 percent respirable release -- since a significant part of the release was in non-respirable fuel fragments. Licensee's Exhibit 3 at p. 9. Indeed, based on what I now know, the use of Chernobyl for comparison seems highly inappropriate here.

II. Conclusion

The criteria for a stay are no longer met.

As discussed above, Intervenors are unlikely to succeed on the merits of any of their important arguments. I also find that Intervenors have not persuaded me that either they or the public would be irreparably injured if a stay were not granted. There is the additional factor of cost and inconvenience to Licensee, which it has demonstrated in its filing, but in the absence of the other grounds for a stay, I need not discuss that factor.

I would point out that in dissolving the stay, I am not affecting the breadth of Licensee's licenses in any way. In particular, this opinion is silent on whether or not Licensee is properly licensed to possess the ^{241}Pu and the Americium which it has said are present in the ^{239}Pu and ^{240}Pu material that it is authorized to possess and use.

Nor does this opinion affect the decision on the merits of the Written Filings. There will be a procedural scheduling conference by telephone in the near future to schedule further written filings. I will be able to make decisions about the possible need for Oral Argument or for an evidentiary hearing, as has been suggested by Intervenors, only after I have analyzed all the written filings.³

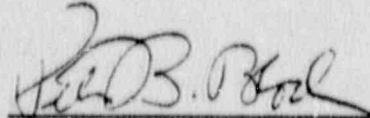
³10 CFR §§ 2.1233, 1235; see also § 2.1209(k).

ORDER

For all the foregoing reasons and upon consideration of the entire record in this matter, it is, this 16th day of November 1990, ORDERED, that:

The temporary stay issued in this proceeding is vacated and is of no further effect. Motions for reconsideration of this Memorandum and Order may be filed within 10 business days of the date of issuance of this Memorandum and Order.

Respectfully ORDERED,



Peter B. Bloch
Presiding Officer

Bethesda, Maryland

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

In the Matter of

THE UNIVERSITY OF MISSOURI

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

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

CERTIFICATE OF SERVICE

I hereby certify that copies of the foregoing LB MEMO & ORDER DTD 11/16/90 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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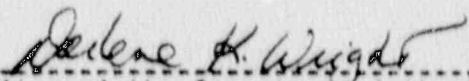
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Docket No. (p)70-270/30-227B-MLA
LB MEMO & ORDER DTD 11/16/90

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A. Bert Davis
Regional Administrator
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Dated at Rockville, Md. this
16 day of November 1990



Office of the Secretary of the Commission