



UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION I
476 ALLENDALE ROAD
KING OF PRUSSIA, PENNSYLVANIA 19406

July 11, 1991

Information in this record was deleted in
accordance with the Freedom of Information Act.
Exemptions: 7
FOIAPA 2008-0125

MEMORANDUM FOR: Vandy L. Miller, Assistant Director for
State Agreements Program

FROM: Francis M. Costello
Acting Regional State Agreements Officer

SUBJECT: NPI PROPOSED WASTE MANAGEMENT PLAN

Enclosed is a copy of correspondence from the State of Maryland about the proposed radioactive waste management plan from Neutron Products, Inc. (NPI). I did not enclose the proposed NPI facility drawing because of its size. The State has requested NRC comments on the NPI proposal. My review of the NPI proposal concurs with that of the State and concludes that this proposal is not consistent with NRC policy regarding storage of radioactive waste at licensee's facilities. In particular, I don't believe that the NPI proposal to hold all waste until 2010 and to hold some waste for 50-100 years would be approved if requested by a similar NRC licensee.

I would appreciate any suggested comments which I should make in a reply to the State. While we will not be providing our final comments on the NPI proposal when Carl Kammerer, Mal Knapp, and I meet with the State to discuss NPI on July 17, 1991, I do expect this subject to be discussed. The State appears to be looking for NRC's support for its intention to require NPI to begin disposing of NPI's radioactive waste this year.

Francis M. Costello
Acting Regional State Agreements Officer

- Enclosures:
1. Memo, Ferguson to Costello, dated June 28, 1991
 2. Memo, Ferguson to Files, dated June 21, 1991
 3. Memo, Subject: Meeting with NPI, dated June 6, 1991
 4. Letter, Ransohoff to Fletcher, dated June 5, 1991

6/15

TO: Frank Costello, USNRC
FROM: Thomas D. Ferguson
DATE: June 28, 1991
SUBJECT: Waste Management Plan for Neutron Products Inc.

For Your Information, you will find enclosed Neutron Products Inc. Waste Management Plan, dated June 5, 1991, and some of our comments that I mentioned in our conversation today.

This could be the largest potential source of waste, contamination, and financial instability that Maryland has faced to date any/ all licensees. Any comment that you or the NRC would have would be welcome.

11/27

Memo to Files

Subject: NPI-RHP meeting on 6/19/91 re: 31-025-01 LLW Plan

Date: 6/21/91

From: Tom Ferguson

On the above date, representatives of Neutron Products, RHP and the HSWMA met at Mr. Ransohoff's request to discuss the Department's opinion of the rad-waste storage plan that NPI first revealed to us on June 6, 1991. Representing management for RHP, Larry Ward stated that we were 180 degrees apart from Neutron in our opinion of the plan. Mr. Ward stated that regardless of the statements in the plan that waste shipments would be made, NPI would become a waste storage site because the range of storage period ranging from a few months to 10-50-100 years. Rick Collins also stated similar views including requirements that all users in the compact must use the authorized site to dispose of rad-wastes.

Ransohoff was not pleased with the State's position on this issue claiming that we were forcing him to deal with monopolies charging exorbitant fees (the waste sites) and that he was currently being sued by the state of Kentucky as a result of waste leaching from the former Maxie Flats waste site. He further asserted that the waste would be far safer at their facility than buried at another site, an opinion that NPI has used for years as an excuse not to have to ship expensive high activity waste from melting operations that have been stored in their pool for years. The remainder of NPI's arguments are fully described in their letter and plan of June 5th. Both RHP and HSWMA stated that for any interim storage plans to be approved that NPI had to commit to ship at least some of their wastes on hand. Mr. Ransohoff strenuously objected to this idea, preferring to keep the waste on site until an "optimum time for disposal" that would be determined by the company based on waste that was at near background levels and ultimate burial would be at an attractive financial rate at a waste site.

Mr. Ransohoff also stated if the entire storage area were not needed that it could also have an unspecified "higher value use". When the state did not appear to change its opinion of the plan, Mr. Ransohoff appeared to offer a vague promise of a trust fund that would accumulate monies to allow for future ultimate disposal. Additionally he stated that NPI was half-way through the Chapter 11 proceeding and were trying to pay off their creditors but that they could not and indeed should not be made to ship the expensive wastes or deal with the decommissioning/bonding issues yet to be placed on the company.

NPI was told at the meeting that because of the poor compliance history of the company, their financial status, and pending legal actions of the Department against them from RHP that the state could not consider their plan for storage of any period without a commitment that at least some if not most of the waste

on site were disposed of before 1993. Mr. Ransohoff refused to consider making any shipments before 1993, stating that for the cost of shipping each barrel of waste offsite for burial that he could build a facility to store two. He also said that the state had prevented from building the waste shields that he desired and that we had failed to grant permission to construct additional shielding around the waste rooms-the latter statement being totally false. As far as the waste shields, they were part of their earliest waste plans that were not considered acceptable because they were to follow rather than precede the covering of the courtyard.

Now, instead of resisting the departments desire to have the courtyard covered, as we discussed more than 5 years ago, he sees an opportunity to reduce his cost of doing business by storing his waste until they decide that it is acceptable both monetarily and activity to dispose of it-which in some cases could be 50 to 100 years.

At the conclusion of the meeting with no decision in his favor, Mr. Ransohoff declared that "this was an interesting exercise!"

ATTENDEES; Jack Ransohoff
Brooks Bowen (Attorney) (NPI)
Frank Schwoerer
Larry Ward
Rick Collins
Neil Thompson
Carl Trump
Ray Manley
Tom Ferguson

NPI 619 MT. 5

Memo to Files

Subject; Meeting with NPI

Date: June 6, 1991

Re: Lic.#31-025-01

A Meeting on the above date was held with Jack Ransohoff and Frank Schwoerer of NPI, and Messers Trump, Thompson and Ferguson of the MDE. The subject of this meeting was "The Plan" as presented by Mr. Ransohoff to handle radioactive wastes not only for his company, but potentially other licensees at his facility for the next 50 years. This Plan was in response to a series of MDE inquiries as to how NPI planned to handle their radioactive wastes during the interim period of 1993-1996.

In a nutshell, NPI proposes to halt all shipments of rad-wastes to burial sites immediately and begin building small shielded containers that will later be placed in vaults in a much larger 3 story structure to be built. As stated in his attached letter of June 5, 1991, virtually none of the rad-waste produced would have to be shipped for disposal until around 2010. This material would be held at NPI, according to Mr. Ransohoff, until dose rates and financial concerns that are favorable to the company would allow shipment and disposal. Some of the most highly active/contaminated material would have to remain on site for approximately 50 years to allow this decay process to occur.

This Plan is approximately 26 pages in length complete with its own definitions, historical perspective, economic and public safety" advantages" for its adoption.

However, in my view, this "Plan" represents nothing less than a sham to deceive the State and the public. No state representative with the public interest in mind, should allow a company in Chapter 11 to begin such a project, one with a record of the highest employee radiation exposure in the world, not to mention, the most radiation safety violations in the state. In addition, the anti-regulatory attitude of company management is equally unprecedented in our state. Who can predict the future 5 years in advance for businesses, yet NPI asks for the right to store over 1200 drums of radioactive wastes on site comprising perhaps 1,000,000 curies for 50 years! NPI states that they will ship small quantities of waste each year" if its convenient and economically favorable to the company"-our own experience with NPI indicates just the opposite- NPI would never ship radioactive waste again. they would simply fill up the large warehouse areas with all types of wastes of their PLUS any that they received from other licensees.

The eventual need to decommission such a facility would rival costs of any of the large Federal sites such as those of the Department of Energy facilities, costing in excess of 100 million dollars, if it could be accomplished at all-thereby leaving the state a legacy of wastes unable to be properly disposed of and requiring permanent caretaking for over 100 years - all at public expense. This of course does not even address the issue of

disposing of these quantities of wastes would most certainly commit Maryland to being a host state for radioactive wastes. Subsequent discussions with Rick Collins of Hazardous Waste Administration have indicated that due to shipping activities of Pennsylvania, that this is indeed the year to ship high activity material from Maryland. NPI is definitely not planning to ship any of their high activity waste primarily because of the expense involved and because they believe that the waste will be "safer" at their facility than at a permanent disposal site. The cost of shipping the higher activity waste on hand in the pool was stated to be approximately 3.2 million dollars at present-so should the state permit NPI to accumulate 10 times more waste that they cannot or will not dispose of?

The solution to NPI's waste storage problem according to RHP staff is to require NPI ship all their radioactive waste now on site and begin the interim period with empty storage areas.

Attendees:

Jack Ransohoff

Frank Schwoerer

Neil Thompson

Tom Ferguson

Carl Trump

10A 6/11/91

01/21/11

NEUTRON PRODUCTS inc

22301 Mt. Ephraim Road, P.O. Box 68
Dickerson, Maryland 20842 USA
301/349-5001 TWX: 710-828-0542

June 5, 1991

Mr. Roland G. Fletcher, Administrator
Radiological Health Program
Department of the Environment
2500 Broening Highway
Baltimore, Maryland 21224

RECEIVED

JUN 6 1991

Dear Mr. Fletcher:

**RADIOLOGICAL
HEALTH PROGRAM.**

Reference is made to your letter of April 12, 1991, to our partial response of May 24, 1991, and to the enclosed conceptual design of a Waste Management Plan for Neutron Products, Inc. ("The Plan"). As stated in our letter of May 24, we did not want to respond to yours of April 12 except in context with The Plan, and we regret any inconvenience caused by the delay that resulted.

Our considered response to your letter of April 12, 1991 is to ask MDE to reconsider its position in view of the fact that it is confiscatory in nature and impractical; and that it is unlikely to be more considerate of the public health, the environment or the general welfare than the alternative approach set forth in The Plan we have drafted in compliance with the objectives of the State's "Implementation Plan for Interim Low Level Waste Management."

We recognize that The Plan constitutes a new approach to Low Level Radioactive Waste management, and a major change from our previously stated intentions; and that MDE may want to proceed cautiously with authorizing its full implementation. However, it is technically and economically sound, and it is responsive to the fact that the Above Grade Storage of what we call Finite Term Waste can safely contribute in a major way to reducing the activity of waste that is presented for ultimate disposal.

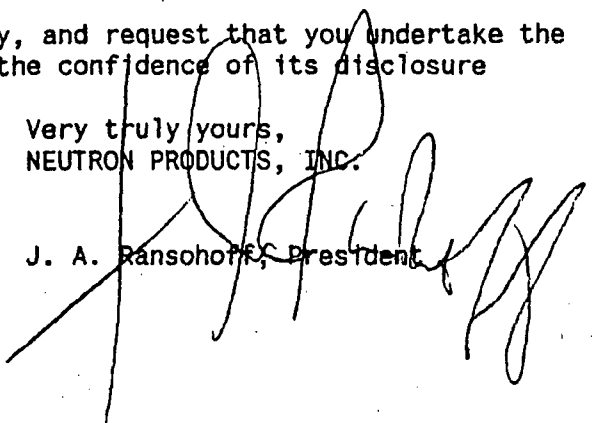
There are numerous ways in which full implementation of The Plan can be approached in stages without unduly degrading its purpose. Accordingly, in addition to asking RHP to reconsider its position of April 12, 1991, I have requested a high level meeting with MDE at an early date to discuss alternatives so that the formal plan that is due on June 30 can be one which is likely to be accorded a fast track for whatever licenses and permits are deemed necessary.

We consider The Plan to be proprietary, and request that you undertake the necessary steps required to maintain the confidence of its disclosure

Very truly yours,
NEUTRON PRODUCTS, INC.

J. A. Ransohoff, President

Enclosures
cc: Lawrence M. Ward
Richard Collins
JAR/djc



JUN 6 1991

WASTE MANAGEMENT PLAN
FOR
NEUTRON PRODUCTS, INC.

A Conceptual Design

June 5, 1991

NEUTRON PRODUCTS inc

JUN 6 1991

WASTE MANAGEMENT PLAN FOR NEUTRON PRODUCTS, INC.

(b)(4)

~~PROPRIETARY~~

NEUTRON PRODUCTS inc

JUN 6 1991

Waste Management Plan
for Neutron Products, Inc.
Page 2

(b)(4)

~~PROPRIETARY~~

NEUTRON PRODUCTS inc

JUN 6 1991

Waste Management Plan
for Neutron Products, Inc.
Page 3

(b)(4)

~~PROPRIETARY~~

NEUTRON PRODUCTS inc

JUN 6 1991

Waste Management Plan
for Neutron Products, Inc.
Page 4

(b)(4)

~~PROPRIETARY~~

NEUTRON PRODUCTS inc

JUN 6 1991

**Waste Management Plan
for Neutron Products, Inc.
Page 5**

(b)(4)

~~PROPRIETARY~~

NEUTRON PRODUCTS inc

JUN 6 1991

Waste Management Plan
for Neutron Products, Inc.
Page 6

(b)(4)

~~PROPRIETARY~~

NEUTRON PRODUCTS inc

JUN 6 1991

Waste Management Plan
for Neutron Products, Inc.
Page 7

(b)(4)

~~PROPRIETARY~~

NEUTRON PRODUCTS inc

JUN 6 1991

Waste Management Plan
for Neutron Products, Inc.
Page 8

(b)(4)

~~PROPRIETARY~~

NEUTRON PRODUCTS inc

JUN 6 1991

Waste Management Plan
for Neutron Products, Inc.
Page 9

(b)(4)

~~PROPRIETARY~~

NEUTRON PRODUCTS inc

JUN 6 1991

Waste Management Plan
for Neutron Products, Inc.
Page 10

(b)(4)

~~PROPRIETARY~~

NEUTRON PRODUCTS inc

JUN 6 1997

(b)(4)

~~PROPRIETARY~~

NEUTRON PRODUCTS inc

JUN 6 1991

(b)(4)

~~PROPRIETARY~~

NEUTRON PRODUCTS inc

JUN 6 1991

Waste Management Plan
for Neutron Products, Inc.
Page 13

(b)(4)

~~PROPRIETARY~~

NEUTRON PRODUCTS inc

JUN 6 1991

~~PROPRIETARY~~

NEUTRON PRODUCTS inc

JUN 6 1991

(b)(4)

~~PROPRIETARY~~

NEUTRON PRODUCTS inc

JUN 6 1991

Waste Management Plan
for Neutron Products, Inc.
Page 16

(b)(4)

~~PROPRIETARY~~

NEUTRON PRODUCTS inc

JUN 6 1991

~~PROPRIETARY~~

NEUTRON PRODUCTS inc

JUN 6 1991

(b)(4)

~~PROPRIETARY~~

NEUTRON PRODUCTS inc

JUN 6 1991

GLOSSARY OF DEFINED TERMS

"Above Grade Storage" is a term used to describe the managed, dispersion resistant storage of Finite Term Waste in shields that reduce background radiation to trivial levels.

"Class A Waste" is a regulatory term of art used to describe waste having a volume specific activity less than 700 curies per cubic meter.

"Class B Waste" is a regulatory term of art used to describe waste having a volume specific activity exceeding 700 curies per cubic meter. Except for very small quantities, it must be shielded during processing, packaging, and storage.

"Encapsulated Waste" is generally Class B Waste created either by the decay of sealed sources to no commercial value, or by the sealing, in stainless steel or other suitable material, of radioactive material that is not of sufficient quality to be of commercial value.

"Finite Term Waste" comprises radioactive waste that must be managed for decades, but not for centuries. The group includes cobalt-60 and most isotopes with shorter half-lives, and in some cases could be extended to include such longer lived isotopes as krypton-85 and hydrogen-3.

"High Activity Waste" is used herein to describe LSA or Class A Waste that requires 3" or more of lead shielding in order to be shipped, and requires substantial shielding during processing, packaging, and storage.

"High Level Radioactive Waste" ("HLRW") is a regulatory term of art that is used in reference to the fission products, spent uranium, and transuranium isotopes generated within the fuel elements of operating nuclear reactors. It may be high in activity or low in activity. For purposes of This Plan, it is important to note that HLRW includes such long-lived isotopes as cesium-137, strontium-90, and various long-lived alpha particle emitting bone seekers which legitimately contribute to the popular perception that radioactive waste must be managed for millenia.

"In Process Waste" describes radioactive waste that requires additional processing or packaging before it is in a condition for release, extended term storage, or economically viable disposal. After extended periods of storage, Packaged Waste may become In Process Waste (or vice versa) because of decay or changes in radioactive waste management alternatives.

"Intermediate Activity Waste" is used herein to describe LSA or Class A Waste that requires substantial shielding during storage and 1/2" to 2-1/2" of lead shielding during shipment.

"Limited Access Area" ("LAA") refers to that portion of Neutron's Restricted Area in which cobalt-60 is processed and the LLRW generated thereby is stored.

"Long-Lived Waste" comprises those isotopes, whether NRW, LLRW, or HLRW which must be managed for substantially more than a century.

NEUTRON PRODUCTS inc

JUN 6 1991

"Low Activity Waste" need not be shielded for processing and packaging, but should be shielded for long term storage, and requires less than 1/2" of lead shielding during shipment.

"Low Level Radioactive Waste" ("LLRW") is a regulatory term of art that is used in reference to waste that is not generated within the fuel elements of nuclear reactors. It may be high in activity or low in activity, and the half-life may be long, short, or intermediate in duration.

"Low Specific Activity Waste" ("LSA") is a regulatory term of art used in reference to waste that has a specific activity lower than 300 millicuries per gram.

"MDR" is the State of Maryland Department of the Environment.

"Natural Radioactive Waste" ("NRW") comprises those naturally occurring radioisotopes that are potentially harmful, and when in concentrated form could (and sometimes should) be managed as waste. The group includes various isotopes of thorium and uranium; lead-210 and its daughter, polonium-210; radium-226 and its daughter, radon-222; and others.

"Packaged Waste" comprises radioactive waste that has been packaged for shipment and/or long term storage and/or ultimate disposal.

"Principal Shield" is a term used to describe the massive shield that also serves a structural role in the proposed courtyard enclosure for the Limited Access Area.

"Regulatory Waste" comprises material, such as soil that is slightly contaminated by cobalt-60, which is classified as radioactive waste by regulation, but is far less hazardous than many unregulated substances which occur in nature.

"RHP" is the State of Maryland Department of the Environment, Radiological Health Program.

"Short-Lived Waste" comprises man-made radioisotopes, many of which are used for medical diagnostics and research, which have half-lives of less than a month, so that they have decayed to levels of insignificance within a few months to a few years of use.

"Waste of Little Concern" ("WLC") need not be shielded for shipping, long term storage, or ultimate disposal, except by its own self-shielding and a modest exclusion area.

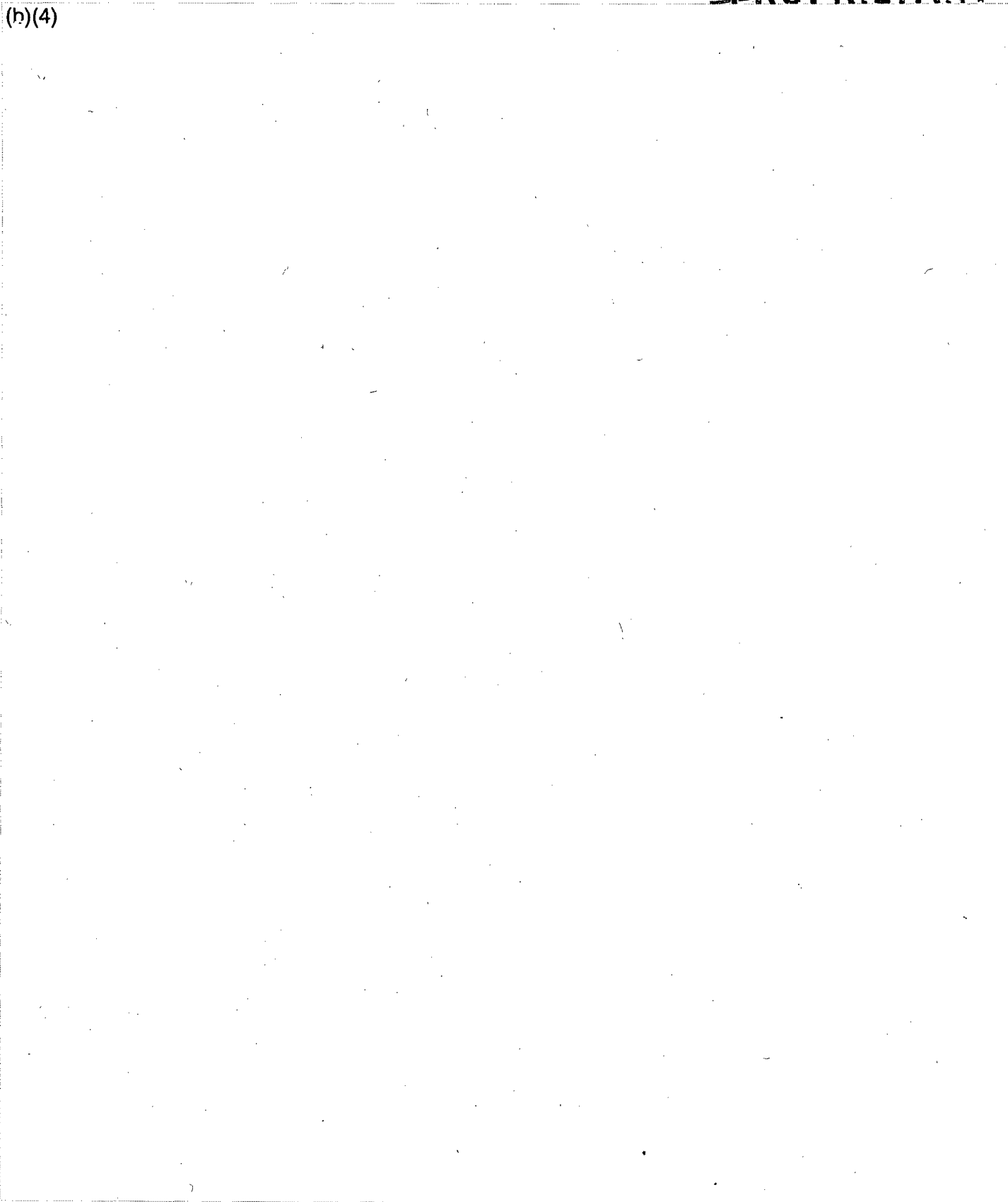
~~PROPRIETARY~~

(b)(4)

(b)(4)

(b)(4)

(b)(4)



(b)(4)

(b)(4)