

INSPECTION REPORT

SUMMARY REPORT ON INSPECTION OF ISSUES ASSOCIATED WITH THE DEPARTMENT OF ENERGY'S TRITIUM SOURCE SELECTION PROCESS

NOVEMBER 1998



U.S. DEPARTMENT OF ENERGY
OFFICE OF INSPECTOR GENERAL
OFFICE OF INSPECTIONS

November 23, 1999

MEMORANDUM FOR THE SECRETARY

FROM: Gregory H. Friedman /s/
Inspector General

SUBJECT: INFORMATION: Summary Report on "Inspection of Issues Associated With the Department of Energy's Tritium Source Selection Process"

BACKGROUND

The Office of Inspector General received a letter dated August 31, 1998 from Senator Strom Thurmond concerning the selection of the tritium production source. The letter stated that information had been received which suggested that certain senior level Department officials may have engaged in a systematic effort to undermine the validity of the Accelerator for the Production of Tritium (APT) option, and that the then Deputy Secretary of Energy directed subordinates to fire an official in the Office of Defense Programs because this official had raised concerns about the cost evaluations of the two tracks, the APT and the Commercial Light Water Reactor (CLWR) option.

The objective of this inspection was to address the following questions presented in the August 31, 1998, letter:

- Is there evidence that DOE principals and staff have worked to influence the outcome of the "Dual Track" process to advance one option over the other?
- Has an official in the Office of Defense Programs, or any other DOE employee, been threatened, pressured, censured, reprimanded, etc. while in the discharge of his official duties pertaining to this matter?
- Have threats, reprimands, or pressures created an environment which would limit the ability or desire of DOE employees to present balanced information about the tritium source selection process?
- Have key DOE employees, including a senior official from the Office of Chief Financial Officer and a senior official from the Office of Nonproliferation and National Security, been excluded from fully participating in the "Dual Track" process?

RESULTS OF INSPECTION

Our inspection found no persuasive evidence that there was a systematic effort to undermine the validity of the APT option. Similarly, we did not find evidence that Department principals or staff worked to improperly influence the outcome of the “Dual Track” process to advance one option over the other.

We found that a senior official suggested to the Deputy Secretary that some form of disciplinary action should be taken against an official in the Office of Defense Programs for unauthorized direction to Los Alamos National Laboratory to expand the APT scope to include the study of the production of medical isotopes; and for the APT team’s involvement in providing information to Congress that was not approved by the Department. However, we found no evidence that the Deputy Secretary directed subordinates to fire that senior official. Further, the senior official said he had not been reprimanded, threatened, or intimidated.

We did not find evidence that an environment was created which would limit the ability or desire of Department employees to present balanced information about the tritium source selection process. Senior Department officials consistently told us that they were not aware of any attempts to muzzle, intimidate, or exclude personnel in order to ensure that the CLWR project appeared to be the most acceptable and cost effective option.

Finally, we did not find evidence that key Department employees were excluded from fully participating in the “Dual Track” process.

Based on our findings, the Office of Inspector General has no recommendations relating to the issues discussed in this report. We understand the U.S. General Accounting Office is reviewing cost issues related to the tritium options. Therefore, our inspection did not address these matters.

Attachment

cc: Acting Deputy Secretary
Under Secretary
Assistant Secretary for Defense Programs
Chief Financial Officer
Director,

SUMMARY REPORT ON INSPECTION OF ISSUES ASSOCIATED WITH THE DEPARTMENT OF ENERGY'S TRITIUM SOURCE SELECTION PROCESS

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Overview

INTRODUCTION AND OBJECTIVE

The Department of Energy (DOE) maintains the Nation's nuclear weapons stockpile. In the early 1990's, as part of its continuing world leadership role in arms control, the United States halted production of new nuclear warheads and conducted its last nuclear explosive test. Thus ended an era in which the U.S. modernized its nuclear weapon stockpile by continually replacing aging systems with new systems. With the decision to cease the production of new nuclear warheads and end nuclear testing, the Nation faced the challenge of maintaining its existing nuclear weapon stockpile.

Tritium is an essential component in maintaining the Nation's nuclear weapons stockpile. However, tritium has a half-life of 12.3 years. Because of the relatively short time it takes for tritium to decay, tritium must be periodically replaced. Over the past 40 years, the Department has built and operated 14 nuclear reactors to produce tritium and other nuclear materials for weapons purposes. Today, none of these reactors are operational, and no tritium has been produced since 1988. In order to maintain the current nuclear weapons capabilities, the Department has been tasked to ensure rapid access to a new production source for tritium within the next decade.

On December 5, 1995, the Department approved a formal Record of Decision for a "Dual Track" strategy to assure a future tritium source. As a result, DOE is currently investigating the two most promising tritium supply alternatives. The Department has created the Office of Commercial Light Water Reactor (CLWR) Production and the Office of Accelerator Production within the Office of Defense Programs to serve as both the experts on, and advocates for, the two tracks. The CLWR track is exploring two options: (1) the purchase of irradiation services from an existing CLWR, and (2) the completion of a CLWR unit at the Tennessee Valley Authority's (TVA) Bellefonte Nuclear Plant in Hollywood, Alabama, with emphasis on the production of tritium while also producing electricity. The Accelerator for the Production of Tritium (APT) track is exploring the design, building, and testing of critical components of an accelerator system for the production of tritium, and the preparation of a design for the actual accelerator facility. The Department's Savannah River Site

located near Aiken, South Carolina, was selected as the location for the APT, should one be built. A third technology, an existing DOE test reactor known as the Fast Flux Test Facility, is also being evaluated for its potential role in tritium production.

As provided in the Fiscal Year 1998 National Defense Authorization Act, the Secretary of Energy is to make a final decision by December 31, 1998, on the technologies to be utilized for tritium production.

The Office of Inspector General received a letter dated August 31, 1998 from Senator Strom Thurmond concerning the selection of the tritium production source. The letter stated that information had been received which suggested that certain senior level Department officials may have engaged in a systematic effort to undermine the validity of the Accelerator for the Production of Tritium (APT) option, and that the then Deputy Secretary of Energy directed subordinates to fire an official in the Office of Defense Programs because this official had raised concerns about the cost evaluations of the two tracks, the APT and the CLWR options. The letter also indicated that an official in the Office of the Chief Financial Officer (CFO) stated that cost estimates reported as "official" by the Deputy Secretary for the completion of the TVA Bellefonte reactor (part of the CLWR option) had not been "validated" by the Department. Further, there was a concern that an official in the Office of Nonproliferation and National Security was not given the opportunity to provide input on whether producing tritium in a CLWR posed "manageable" nonproliferation risks.

The objective of this inspection was to address the following questions presented in the August 31, 1998, letter:

- Is there evidence that DOE principals and staff have worked to influence the outcome of the

“Dual Track” process to advance one option over the other?

- Has an official in the Office of Defense Programs, or any other DOE employee, been threatened, pressured, censured, reprimanded, etc. while in the discharge of his official duties pertaining to this matter?
- Have threats, reprimands, or pressures created an environment which would limit the ability or desire of DOE employees to present balanced information about the tritium source selection process?
- Have key DOE employees, including a senior official from the Office of Chief Financial Officer and a senior official from the Office of Nonproliferation and National Security, been excluded from fully participating in the “Dual Track” process?

**Observations and
Conclusions**

Based on interviews of senior level Department and contractor officials involved in the “Dual Track” process and the review of pertinent documentation,

Issues Associated With the Tritium Source Selection

Details of Findings

we found no persuasive evidence that there was a systematic effort to undermine the validity of the APT option.

Based on interviews of current and former senior level Department and contractor officials, we did not find evidence that Department principals or staff worked to improperly influence the outcome of the “Dual Track” process to advance one option over the other. An official in the Office of Defense Programs (to be referred to hereafter as Defense Programs Official “A”) stated that while he has not been reprimanded and has not been threatened or intimidated in the exercise of his official responsibilities, there were a series of events that led him to believe there may be a bias against the APT option. However, we found no persuasive evidence to support this belief.

We found that a senior official suggested to the Deputy Secretary that some form of disciplinary action should be taken against Defense Programs Official “A” for unauthorized direction to Los Alamos National Laboratory (LANL) to expand the APT scope to include the study of the production of medical isotopes; and for the APT team’s involvement in providing information to Congress that was not approved by the Department. However, we found no evidence that the Deputy Secretary directed subordinates to fire Defense Programs Official “A”. A senior official in the Office of Defense Programs (to be referred to hereafter as Senior Defense Programs Official “B”) said that he told Defense Programs Official “A” to rescind the direction to LANL expanding the APT scope; and that communication from the Department to Congress should contain the Secretary’s signature. The Senior Defense Programs Official “B” described his discussion as a form of verbal disciplinary action, however, Defense Programs Official “A” told us that he had not been reprimanded, threatened, or intimidated.

We did not find evidence that an environment was created which would limit the ability or desire of Department employees to present balanced information about the tritium source selection process. Senior Department officials consistently told us that they were not aware of any attempts to

muzzle, intimidate, or exclude personnel in order to ensure that the CLWR project appeared to be the most acceptable and cost effective option. The Deputy Secretary stated that both the APT and CLWR programs were given an equal opportunity to present their programs to the Secretarial officers. She stated that she has worked hard to make sure there was a fair comparison concerning the tritium options, and that one option was not presented unfairly over the other. She stated that because there were no reprisals or censorship of any kind regarding anyone performing their official duties, she could not possibly have created an intimidating environment that could have interfered with an advocate presenting an option. Other current and former Senior Department officials confirmed the Deputy Secretary's statement.

In addition, Defense Programs Official "A" stated neither he nor anyone else that he was aware of, was threatened or intimidated regarding the tritium production source selection process. He stated that the criticism regarding the direction to LANL to expand the APT scope has stopped him from studying the medical isotope issue and from saying things publicly about the issue, but that he did not feel this has caused him to be less effective.

Finally, we did not find evidence that key Department employees were excluded from fully participating in the "Dual Track" process. The senior CFO official stated that he has not been excluded from the tritium production source selection process, nor is he aware of anyone else that has been inappropriately excluded from the process. He stated that he was part of an informal group brought together by the

former Secretary to review the various proposals presented by each program. He stated that no one in CFO was involved in conducting a validation or independent cost estimate for the APT or CLWR options. However, the senior CFO official also stated that the concerns that the cost estimates for the tritium production source alternatives were incomplete and unsubstantiated are not warranted. He also stated that each program has been working on its cost figures for quite a while, and the cost figures being used were the best estimates at that point in time.

Conclusion

The senior official from the Office of Nonproliferation and National Security stated that she was intimately involved in the preparation of a July 1998 report to Congress titled, "INTERAGENCY REVIEW OF THE NONPROLIFERATION IMPLICATIONS OF ALTERNATIVE TRITIUM PRODUCTION TECHNOLOGIES UNDER CONSIDERATION BY THE DEPARTMENT OF ENERGY." She stated that she concurred with the final report, and agreed with the conclusion that producing tritium in a Commercial Light Water Reactor involves "manageable" nonproliferation risks.

Based on our findings, the Office of Inspector General has no recommendations relating to the issues discussed in this report. It should be noted that the Senate Armed Services Committee has requested the U. S. General Accounting Office (GAO) to review issues related to the selection of a new tritium production source. Specifically, GAO

Scope

was asked to provide information on (1) what alternatives DOE is considering for tritium production and the criteria DOE plans to use to select among competing methods, (2) what cost estimates have been prepared for each of the alternatives, including what assumptions and parameters the estimates are based on, and (3) what independent reviews have been done on the cost estimates. We did not address the issues being reviewed by GAO. Based on the information provided in the August 31, 1998, letter, we evaluated:

- Whether there was evidence that DOE principals and staff have worked to influence the outcome of the "Dual Track" process to advance one option over the other.
- Whether an official in the Office of Defense Programs, or any other DOE employee, has been threatened, pressured, censured, reprimanded, etc. while in the discharge of his official duties pertaining to this matter.
- Whether threats, reprimands, or pressures have created an environment which would limit the ability or desire of DOE employees to present balanced information about the tritium source selection process.
- Whether key DOE employees, specifically a senior official in the Office of the Chief Financial Officer and a senior official in the Office of Nonproliferation and National Security, have been excluded from fully participating in the "Dual Track" process.

Methodology

To accomplish the inspection objectives, we interviewed 24 current and former senior level Department and contractor officials involved in the tritium source selection process.

We also reviewed documentation relating to the tritium project, including: (1) the August 31, 1998, letter to the Office of Inspector General: (2) a

December 5, 1995, Record of Decision for a “Dual Track” strategy; (3) the July 1998 report to Congress titled, “INTERAGENCY REVIEW OF THE NONPROLIFERATION IMPLICATIONS OF ALTERNATIVE TRITIUM PRODUCTION TECHNOLOGIES UNDER CONSIDERATION BY THE DEPARTMENT OF ENERGY;” (4) the Department’s “FY 1999 CONGRESSIONAL BUDGET REQUEST, DEFENSE PROGRAMS” and other cost and budget information from the Tritium Project Office; (5) the “DEPARTMENT OF DEFENSE AUTHORIZATION ACT FOR FISCAL YEAR 1998;” (6) H.R. 3616, (7) GAO Report titled “TENNESSEE VALLEY AUTHORITY - FINANCIAL PROBLEMS RAISE QUESTIONS ABOUT LONG-TERM VIABILITY;“ (8) “COMPARISON OF COSTS...” documents prepared by the APT team; and, (9) various documents provided by interviewees. This inspection was conducted between September and November 1998.

This inspection was conducted in accordance with the “Quality Standards for Inspections” issued by the President’s Council on Integrity and Efficiency.

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