

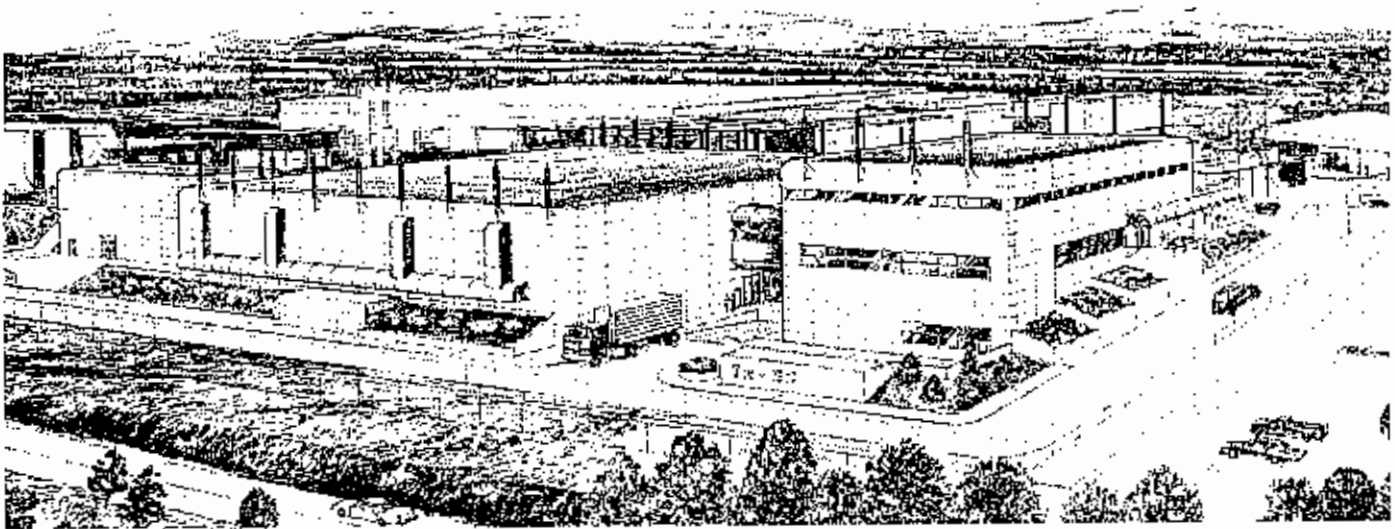
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fact sheet

LALP-89-48

January 1990

Special Nuclear Materials Research and Development Laboratory Replacement Project at Los Alamos National Laboratory



Architectural rendering of the Special Nuclear Materials Research and Development Laboratory Replacement Project.

Highlights

- The Project will consolidate Los Alamos National Laboratory's special nuclear materials research and development activities at Technical Area 55. (Special nuclear materials, as defined by the U.S. Department of Energy, include certain quantities and isotopes of uranium and plutonium.)
- The total facility will include about 193,000 square feet of laboratory, office, and support space and will replace aging laboratories in the Chemistry and Metallurgy Research Building (also known as the CMR Building).
- The replacement laboratory will be a state-of-the-art facility that will enhance operational reliability and security.
- The new facility will reduce the environmental effects of current operations because it will decrease the volume of waste materials and reduce radioactive emissions.
- The facility is designed to be built, operated, and ultimately decommissioned without undue risk to the environment, general public, or on-site personnel.
- Safety analyses are being performed to ensure appropriate risk reduction in the design, construction, and operation of the facility.

Project Description

The Project will consolidate Los Alamos National Laboratory's special nuclear materials research and development activities at one site and relocate the analytical chemistry functions currently performed in the CMR Building. The new facility will enhance operational reliability and security and ensure employee, public, and environmental safety.

The new laboratory will be located at Los Alamos National Laboratory adjacent to the Plutonium Facility at Technical Area 55.

The Project involves the design, construction, and operation of new facilities totaling about 193,000 square feet. The complex consists of a research and development laboratory, a laboratory support and office building, a utilities building, a guard station, and a replacement waste pretreatment facility. The Project also includes the decontamination and renovation of a portion of the CMR Building.

Current Status

- Preliminary design will be completed in January 1990.
- The Department of Energy is preparing an Environmental Impact Statement, which is expected to be completed in 1991.
- Site work and utilities construction are scheduled to start in mid 1991, after completion of the Environmental Impact Statement.
- Facility construction is planned for completion in the fall of 1994.

Project Funding

- Fiscal Year 1988 funding was \$10 million. Funding for Fiscal Year 1989 was \$22 million.
- Scheduled funding is \$14 million for Fiscal Year 1990 and \$20.6 million for Fiscal Year 1991. Additional funding will be determined as the Project proceeds.

- Funds for this Project are appropriated by Congress and administered by the Department of Energy Assistant Secretary for Defense Programs.

Environmental Impact Statement

The Department of Energy has contracted with an independent firm, Battelle Pacific Northwest Laboratory, to prepare an Environmental Impact Statement to address and evaluate specific environmental concerns related to the construction, operation, and ultimate decommissioning of this Project.

The public has an opportunity to comment on the scope of the Environmental Impact Statement for a period of thirty days from the date a formal Notice of Intent is published in the Federal Register. Also during this period, a public meeting will be held in Los Alamos to receive public comments. Public comment will be sought again when the draft Environmental Impact Statement is completed and distributed to interested parties.

Information about the Environmental Impact Statement comment and review procedures may be obtained from Donald Lucero, Project Manager, U.S. Department of Energy, Albuquerque Operations Office, P. O. Box 5400, Albuquerque, New Mexico 87115, telephone (505) 665-2170.

Environment, Safety, and Health

The overall environment, safety, and health objective is to ensure that the facility is built, operated, and ultimately decommissioned without undue risk to the environment, general public, or on-site personnel. This objective will be pursued with a risk management system that ensures compliance with applicable state and federal requirements. Safety analyses are being

performed to ensure compliance with these requirements and to achieve appropriate risk reduction in the design, construction, and operation of the facility.

An Environment, Safety, and Health section has been established as part of the Project's management organization. Additional professional support is provided through a Los Alamos National Laboratory Health, Safety, and Environment Division team of experts in health physics, industrial safety, industrial hygiene, nuclear criticality safety, waste and environmental management, and construction safety.

The Project is being designed to reduce any effects on the environment by decreasing the amount of low-level radioactive waste generated by nuclear materials research and development operations. Although emissions from the existing facility meet the applicable federal and state standards, radioactive emissions from the new facility will be further reduced by about ninety percent. This reduction will result mainly from state-of-the-art air cleaning systems in the new facility. The Project will also consolidate special nuclear materials operations. This consolidation will reduce transportation of special nuclear materials on Department of Energy roads at Los Alamos, which are open to the public.

Operations

As one of its primary missions assigned by the Department of Energy, Los Alamos National Laboratory conducts special nuclear materials research and development to advance technology at other Department of Energy facilities. This research and development consists, generally, of developing and verifying advanced chemical procedures for the recovery and purification of special nuclear

materials and associated waste minimization. The systems and equipment necessary to implement the new or improved processes are then demonstrated so that the technology may be incorporated at other Department of Energy facilities.

This facility's research and development activities will be directed toward enhancing the safety, environmental protection, material accountability, and efficiency of special nuclear material process technology. This facility will also provide analytical chemistry capabilities needed at Technical Area 55.

The goals of the Project's research and development are to decrease special nuclear materials in chemical process residues, to further reduce potential occupational radiation exposure, to maintain rapid and accurate measurement of nuclear materials for process development control and inventory, and to minimize waste generation.

The research and development portion of the laboratory will house the following operations: waste management, nitrate process development and nitrate research and development, chloride process development and chloride research and development, special nuclear materials diagnostics, sample management, reference standards preparation, and non-destructive assay.

The analytical chemistry portion of the facility will house the following operations: spectroanalysis, mass spectrometry, plutonium assay, plutonium chemistry, radiochemistry, x-ray fluorescence, analytical sample management, and analytical research.

The design for the laboratory building will meet Department of Energy criteria to safely withstand major natural phenomena, including an earthquake and an extreme windstorm.

The replacement waste pretreatment facility will house a concentration process to remove the major portion of any radioactive elements from the waste stream before it enters the main waste treatment plant.

The laboratory support and office building, which will also house storage and change rooms, will not contain radioactive materials.

Project Management

A Project Office has been established in Los Alamos and staffed with Los Alamos National Laboratory and Department of Energy personnel. This office is responsible for Project planning, engineering, procurement, and construction.

Procurement

A Project Office acquisition section has been established for the solicitation, negotiation, and award of subcontracts.

All subcontracts will be awarded using Los Alamos National Laboratory and University of California procurement procedures approved by the Department of Energy. Subcontracts will include architect-engineer services, construction, specialized facilities equipment, and standard commercial products.

Special equipment, such as gloveboxes and internal confinement systems, which accounts for a significant portion of the costs of the Project, will be procured from pre-evaluated equipment suppliers qualified under nuclear quality assurance requirements.

Initiatives have been established to enhance small, women-owned, and minority business subcontracting opportunities. Bids will be solicited for fixed-price construction subcontracts from regional and local contractors.

Engineering and Construction

Los Alamos National Laboratory will award and manage construction subcontracts for the new facilities and for refurbishing existing facilities. Initial construction of new facilities could begin as early as mid 1991 and continue through the fall of 1994. Refurbishment of existing facilities is planned to begin in the winter of 1994 and to end in the fall of 1996.

It is estimated that the labor force required for the Project will peak at about 300 people in 1993. Construction needs for the new facility are estimated at 150,000 cubic yards of excavation, 36,000 cubic yards of concrete, 950 tons of structural steel, 160,000 feet of electrical conduit, 500,000 feet of wire, and 185,000 feet of piping.

Quality Assurance

To enable the successful completion of this complex project, a quality assurance program has been established. This program will ensure that design and construction meet Department of Energy orders, regulations, and guidelines. The quality assurance program will conform with the requirements of the primary national consensus standard ASME NQA-1, "Quality Assurance Program Requirements for Nuclear Facilities."

Los Alamos Los Alamos National Laboratory
Los Alamos, New Mexico 87545

Los Alamos National Laboratory, an affirmative action/equal opportunity employer, is operated by the University of California for the U.S. Department of Energy under contract W-7405-ENG-36.

DOE planning talks for plutonium facility

By CHAMMIAN SCHALLER
Monitor Staff Writer

The Department of Energy is planning a public "scoping meeting" late this month to gather comments on a planned new Los Alamos National Laboratory plutonium recovery facility.

The DOE notices of intent to prepare an environmental impact statement for the project appeared today in the Federal Register.

The public meeting will be held at 7 p.m., Jan. 31, in the Pajarito Room of Fuller Lodge in Los Alamos.

The new Special Nuclear Materials Research and Development Laboratory, a 193,000-square-foot complex, will take over

the plutonium handling functions of LANL's existing 37-year-old Chemical and Metallurgical Research building.

The new complex will be located at Technical Area 55. The location will make possible the consolidation of all LANL plutonium-handling operations in one area.

Calvin Martell, technical representative from CLS-1, the analytical group of the Chemistry and Laser Science Division, said, "They're going to be reprocessing plutonium — producing it from scrap."

The work at the new facility will involve recovery, not original production, of plutonium, he emphasized.

He said those working at the facility also will

be doing research and development. "They want to learn to do it better," he said. Information developed through work at the facility will be made available to other facilities including Rocky Flats.

Martell added that the new building, its location, and the work done there should make it possible to lessen plutonium impact on the environment.

The facility will be closer than CMR to sites where plutonium scrap is stored at LANL, he said.

In response to Monitor questions, Martell said that similar work now is done at PS4, which is near the planned site, and that at PS4, the "vast majority" of the plutonium recovery

work currently deals with "internal recycle" material — plutonium scrap stored at LANL and outgoing air systems.

Asked about the transportation of scrap plutonium to the proposed site of the new complex, Martell said the scrap will be multiply packaged in approved containers and moved in escorted trucks.

Martell said about half of the new complex will be devoted to analytical facilities where plutonium and its impurities will be analyzed.

Design of the complex is in progress and should be completed this year. Construction is expected to be completed in the fall of 1994.

One of the essential parts of the design of the new complex will be planning for specialized air filtration. High-efficiency particulate air fil-

ters (HEPA filters) will be used on incoming and outgoing air systems.

The total cost of the facility (through all of its phases) could be as much as \$180 million. The actual cost will depend on completion time. Thus far, the DOE has sought \$110 million for the project, and Congress has approved \$75 million in funding for the first three years of the project (through 1993).

The public meeting and written statements will be used in identifying issues that should be covered in a subsequent draft environmental impact statement on construction of the building, according to the DOE notice. Once a draft is prepared, it will be made available to the public.

(Please see PLUTONIUM, Page 6)

6 Friday, January 12, 1990

Plutonium

(from Page 1)

EIS is completed, there will be further opportunities for public comment.

The notice published in the Federal Register said that issues identified so far for coverage in the environmental impact statement include: public and occupational safety ("The radiological and toxicological impacts of routine operations and potential accidents including projected effects on workers and the public will be addressed in accordance with DOE policy."); regulatory compliance; air quality ("The effects of radioactive and nonradioactive air emissions"); waste management ("The environmental effects of the generation, treatment, transport, storage, and disposal of radioactive,

on the project

• He noted that perhaps the most significant historical item on the site, a log cabin from Los Alamos County's homesteading days, was moved many months ago to a new site adjacent to Fuller Lodge and the Los Alamos Historical Museum.

• And, he said, there are plans to decontaminate CMR and reuse its 550,000 square feet — primarily as chemical laboratory space, unify LANL's scattered chem lab areas.

He said investigation is now in progress to determine the impact over the years of radioactive work on the hot work, plumbing, and other portions of CMR. When the investigation is completed, he said, the necessary material will be removed, and new equipment will be installed.

• The CMR is safe, he said.

(Although the DOE's funding request told Congress that, "Conceded and broached air handling ducts, inadequate supply of filtered air, marginal building-wide filter systems and inadequate control systems contribute to serious situations developing...")

But, he said, the cost of doing the ongoing repairs to keep the aging building safe are growing rapidly. The laboratory is saying, Martell said, "Let's build a new one before we have trouble."

Those wishing to comment by mail should send letters postmarked by March 1 to: Donald Lucreo, U.S. Department of Energy, Albuquerque Operations Office, P.O. Box 5400, Albuquerque, N.M., 87115, telephone 665-2170. Requests for copies of the draft EIS, once it is developed, should be directed to the same man.

Questions about further information on the EIS process should be directed to: Carol M. Borgstrom, director, Office of NEPA Policy Assistance (E11-23), U.S. Department of Energy, 1000 Independence Ave. SW, Washington, D.C., 20585, telephone 202-386-4600.

According to the Federal Register notice, "Individuals desiring to comment orally at this meeting (on Jan. 31 in Los Alamos) should notify Mr. Lucreo... as soon as possible so that the department can arrange a schedule of presentations. Persons who have not submitted a request to speak in advance may register to do so at the meeting. The meeting will not be conducted as an evidentiary hearing, and there will be no questioning of speakers."

So that everyone will have an opportunity to speak, the notice said, speakers will be limited to five minutes each.

Los Alamos Monitor

Bill funds Los Alamos

4/12/89

By PETER EICHSTAEDT
The New Mexican Staff
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Work could begin next year on a \$210 million plutonium-processing and weapons-research complex at Los Alamos National Laboratory that officials say is the largest construction project in the lab's history.

In late September, President Bush signed into law a bill that gave the lab \$41 million to begin construction of the Special Nuclear Materials Research and Development Laboratory. The law passed through Congress with no fanfare.

The lab already has received \$32 million over the past two years for development of the project. An additional \$134 million is expected over the next four years during construction, according to laboratory projections.

"The laboratory will be used for research on and development of actinide (radioactive) materials that are germane to the Laboratory's nuclear weapons program," according to a lab publication titled "Research Highlights, 1988."

"Much of the research in the complex will focus on developing methods for recovering plutonium contained in residue

and scrap materials," the publication stated.

The publication did not say if old nuclear warheads were included in the term "scrap materials." The lab historically has designed and developed the nation's nuclear warheads, although production occurs elsewhere.

"Design of the complex is expected to take approximately two years; construction is scheduled to begin during the winter of 1990," the publication stated.

The complex will consist of three buildings: a multi-story 91,000-square-foot main building, a 65,000-square-foot office

Plutonium plant

building and a 16,000-square-foot utility building.

Dave Jackson, a spokesman for the Department of Energy in Albuquerque, said an environmental impact statement will be required before construction on the project could begin.

The process of developing an environmental impact statement will require public comment, he said. But no schedule for public hearings was available.

Jackson said information on the project and the impact statement would be available in early December. Jackson did

not know if the impact statement would delay the project.

The project prompted a Santa Fe-area anti-nuclear group to question the direction of laboratory work and the handling of radioactive materials in the future.

"It raises real concerns of the direction the lab is going in terms of military research," said Richard Miller, director of Concerned Citizens for Nuclear Safety.

Funding for the new laboratory building is noted in the LANL five-year plan and is listed under "Weapons Research and

See Bill on Page A-2

Bill funds plant for plutonium

Continued from Page A-1

Development Activities."

The five-year plan also details a variety of other new construction projects proposed at the lab, but as yet unfunded.

One is called the Radioactive Liquid Waste Treatment Plant, which would cost \$100 million. The plant funding is not anticipated until 1992 and would continue until 1995.

Another item in the five-year plan was \$2.4 million this year for work at one of the lab's radioactive landfills called "Area P."

The U.S. Environmental Protection Agency is expected to sign a

Plutonium plant concept grows

4/17/89

By PETER EICHSTAEDT
The New Mexican Staff

Both the purpose and cost of a proposed plutonium research complex at Los Alamos National Laboratory have been expanded from the original proposal, a laboratory spokesman said Thursday.

Originally budgeted for \$210 million, the cost of the Special Nuclear Materials Research and Development Laboratory now is estimated at \$380 million, laboratory spokesman John Webster said.

In addition to weapons-related research with plutonium and "scrap metals," the new laboratory also will be used to pre-treat plutonium waste, he said.

Webster said the laboratory will handle only waste generated by Los Alamos laboratory,

not waste from other laboratories.

"There should be less waste," because of the pre-treatment program, he said. "The amount of waste should be reduced. It will be more efficient."

The research will include ways to process radioactive materials from old nuclear warheads, Webster said.

The radioactive contamination is not extensive, he said, but affects devices used to handle radioactive materials.

The new complex will be the biggest construction project ever undertaken by the laboratory, he said.

Ground-breaking originally was scheduled for late 1988, according to information on the project released in May 1988. But the project has been

delayed to give laboratory officials time to study the effects of the complex on the environment, Webster said.

Webster said the federal Department of Energy, the umbrella agency for the lab, will issue a "notice of intent" to prepare the impact statement in mid-December.

A public meeting to gather comments on the scope of the environmental study tentatively is set for mid-January in Los Alamos, he said.

Webster said the environmental impact statement must be approved by the Energy Department before any work other than design takes place.

Construction of the project now is scheduled to begin in September 1991, he said. It will take about four years to com-

plete, he said.

Congress already has allocated about \$32 million for the project, not all of which has been spent.

An additional \$44 million was included in a bill signed into law by President Bush in late September.

In May 1988, an \$11.9 million architectural and engineering design contract was awarded to Flour-Daniel of Irvine, Calif.

The design work was expected to take nine months but actually took more than a year to complete. It was finished recently.

Members of the state's congressional delegation said they have been aware of the project for two years and support spending federal money for it.



—spectator JOHN ROMERO.
 Cab driver Mike Laneer drove Abrams — whose driver's license expired in April 1986, according to Motor Vehicle Division records — to the Vickers on Central and was told to wait outside.
 Steve Barreras, an employee of the Vickers, picked up the ton.
 "The guy came in a taxi, about 3 a.m., walked in and asked for some cigarettes," said Barreras. "Then he pulled a gun, a .45 magnum, out on me and another fellow (Calvin Whitley) and demanded money."
 Barreras said the man, after taking the money, walked out of the gas station and got back in the taxi.
 "He came in pretty calm," Barreras said of the man's mannerisms. "He stayed calm and

after a car-malfunction drove last evening with Toujig's death in 1972 year of the victory of Our Lady of the Assumption Church at Paul Avenue and Tennessee Street Nashville.
 ■ July 29: Wheeler, Dist. 16, 63, a well-known teacher from Sa-de-la Park, was shot by three Albuquerque police officers after Diarmide returned to be taken during a robbery. Police said he pulled out a .38-caliber and fired the gun at officers.
 ■ Nov. 26: Rodrick Evans Adams, 27, was shot to death by two Albuquerque police officers after he allegedly robbed a gas station and later took a woman hostage.

Rodrick Abrams was fatally shot by Albuquerque police Sunday after a brief chase.

CAB From A1

"He told me to pull into the Vickers because I need some cigarettes," he said.
 Abrams returned to the car about the robbery at Vickers. Laneer went to Vickers, told police what he knew and then went back on duty.
 It was while he was driving east on Central past the Sand and Sage Motel, 6522 Central Ave. N.E.
 Abrams never talked other than to give directions, Laneer said. Abrams paid Laneer, and the driver went on pick up another fare.

"I didn't know how the woman (driver) was involved but I noticed the man slipping down in the passenger seat," Laneer said. "He was nervous this time. I said, 'This is not normal!'" Laneer said he did not know the driver had been taken hostage.

Los Alamos plans plutonium lab to replace old facility

By TONY DAVIS
 Staff reporter

Los Alamos National Laboratory is planning its most expensive construction project ever, a \$350 million to \$380 million plutonium research facility the lab says will be the finest of its kind in the world.
 In the meantime, a 35-year-old building to be replaced by the new facility in the mid-1990s is a safety risk that is "at the end of its useful life," according to a U.S. Department of Energy document from Washington, D.C.

The new Special Nuclear Materials Research and Development Laboratory, like the old building, will be used to study how to recover plutonium from residue and scrap material. The new lab will be "the world's most advanced laboratory for plutonium research," Los Alamos officials said in a newsletter about the facility.
 The new laboratory will have two to three buildings, totaling up to 170,000 square feet, compared to 550,000 square feet for the old building.
 Construction could start by 1981, after completion of the environmental impact statement. The statement will outline how DOE believes the new project will affect the environment and what DOE will do to minimize the effects.

from DOE's budget. The University of California at Berkeley operates Los Alamos for the department.
 A Los Alamos spokesman said the concerns about the old building have been addressed.
 "The concerns expressed by DOE in its documents reflect problems that have occurred and continuing concerns both by the DOE and the lab," said Los Alamos spokesman John Webster. "But things are upgraded and replaced before they present any health threat to the people who work there. We monitor that place carefully and there is no threat to anyone who is there."
 As aide to Sen. Jeff Bingaman, however, said DOE officials are trying to have it both ways.

Los Alamos is a key DOE research facility, producing the department's weapons production complex across the United States and receiving money

Democrat. "They also tell their own employees not to worry, we've got it under control."
 McCaffigan said he's never visited the old building and can't say if it's safe or not. But if it is as bad as the DOE memo makes it sound, DOE should have started planning the new building sooner, he said.

"The problem is that for most of those years production of nuclear weapons took priority over the environment," McCaffigan said.
 Plutonium is a key element in nuclear weapons design and production, it has been used in research at the lab since the World War II Manhattan Project to build the first atomic bombs. It can cause cancer if inhaled.

Congress has authorized the new lab's construction, but has appropriated only about \$76 million for it so far. There's a meeting in Denver, the spokesman said, to discuss the concerns about the new facility.

They tell us in Congress it's a very severe situation, and it's going to cost hundreds of millions of dollars to replace it," said Ed McCaffigan, legislative director for the New Mexico

what the environmental document should cover.
 The old building, called the Chemical and Metallurgy Research Building, has "corroded and breached air-handling ducts, inadequate supply of filtered air, marginal building-wide filter systems and inadequate control systems," said a DOE budget request document submitted to Congress early this year.
 "Many areas in the (old) building are radiologically contaminated and beyond economically viable cleanup," said the DOE document, which was seeking money for the new lab.
 "Project completion (of the new building) will occur in (fiscal year) 1994 at the earliest — a time during which likelihood of serious accidents and litigation is increasing," the DOE document said.
 An identical warning about the old building appeared in a DOE budget request for the new facility in 1988.

Faculty panel

ADMITTED PUBLIC
 Alb. Tribune 1/27/87

Advisory Committee on Nuclear Facility Safety
to the
United States Department of Energy
1000 Independence Avenue, SW
Washington, DC 20585
November 6, 1990

The Honorable James D. Watkins
Secretary of Energy
U.S. Department of Energy
1000 Independence Avenue, S.W.
Washington, D.C. 20585

Dear Admiral Watkins:

Your Advisory Committee on Nuclear Facility Safety met in Los Alamos, New Mexico, on September 24 and 25, to review specific safety issues at the Los Alamos National Laboratory (LANL). The Committee toured selected facilities at the laboratory, heard technical presentations from representatives of the laboratory staff, and received comments from the public. We recognize that a brief visit is not much more than an audit. However, based on this meeting, we have the following observations and recommendations.

LANL appears to be well managed and the employees we encountered seemed to be both well-trained and enthusiastic about the work they were doing and satisfied with the working environment and resources they were provided. From the limited sample the Committee saw, the research and development program at LANL impressed us as being well planned and well conducted.

We were also pleased by the extent to which LANL management has recognized the importance of, and is working to implement fully, two fundamental safety principles which you have espoused: the need for line managers to take active responsibility for the safety of the employees and facilities under their control and the need to instill an awareness by employees at every level of the importance of safety as a primary parameter in all of their activities. We did find instances, particularly at the research/waste management interface, which made it clear that there is still work to be done. However, we believe that LANL management will be successful in developing the new safety culture.

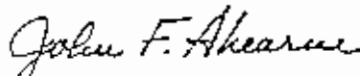
During the public comment session, some persons expressed concern that environmental monitoring results are not becoming available to the public until many months after they are completed. In one case, this delay was two years. Apparently, most of the delay arises from the approval process for these reports by headquarters offices and is a generic problem affecting the release of environmental monitoring information at other sites as well. We believe that it is important for the general public and those most directly exposed to have timely access to this environmental monitoring information concerning routine or accidental releases of

radiologic or toxic materials. Therefore, we recommend that ways be sought to speed up the release of monitoring reports, such as has been done at the Rocky Flats Plant. One possibility is to delegate approval authority to either the Albuquerque Operations Office (ALO) or LANL.

Finally, the Committee believes that the plutonium processing capabilities and expertise it saw at TA-55 are a significant but under-utilized asset to DOE. Much of the equipment and many of the procedures used there are state-of-the-art and represent substantial improvements over equipment and procedures in use elsewhere in the DOE complex. For example, the Committee was especially pleased to see that the technology used for the glove boxes at LANL was much more advanced than that at the Rocky Flats Plant, and that careful attention was being devoted to prevention of contamination of duct work. We recommend that serious consideration be given to how the capabilities at TA-55 could be used to provide broader benefits to the complex.

I would be glad to discuss any of these issues further.

Sincerely,



*for
work* John F. Ahearne
Chairman