

[6450-01]

U.S. DEPARTMENT OF ENERGY

FINDING OF NO SIGNIFICANT IMPACT
FOR
EXPANSION OF THE IDAHO NATIONAL ENGINEERING LABORATORY
RESEARCH CENTER

AGENCY: Department of Energy

ACTION: Finding of No Significant Impact (FONSI)

SUMMARY: The Department of Energy (DOE) has prepared an environmental assessment (EA), DOE/EA-0845, for expansion and upgrade of facilities at the Idaho National Engineering Laboratory (INEL) Research Center (IRC) in Idaho Falls, Idaho. Construction and operation of proposed facilities would not cause significant environmental impacts. Based on the analyses in the EA, DOE has determined that the proposed action is not a major Federal action significantly affecting the quality of the human environment within the meaning of the National Environmental Policy Act (NEPA) of 1969, 42 U.S.C. 4321, et. seq. Therefore, an environmental impact statement (EIS) is not required.

PUBLIC AVAILABILITY: Single copies of the EA and FONSI are available from:

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BACKGROUND: IRC facilities are located on a partially developed 14.3 hectare (35.5-acre) plot located in an area zoned for commercial development on the north side of Idaho Falls, Idaho. Existing structures include office and laboratory buildings. The original and largest building at the IRC consists of an office building interconnected by an enclosed walkway with the laboratory building.

The laboratory/office building is used as an experimental research facility and contains 63 laboratories. Individual laboratories are dedicated to a wide range of research areas, including industrial microbiology, geochemistry, materials characterization, welding, ceramics, thermal fluids behavior, materials testing, nondestructive evaluation methodologies, analytical and environmental chemistry, and biotechnology. Other activities at the IRC include routine sample analysis, such as bioassays, and other INEL support functions. The IRC supports nuclear and other energy-related programs at the INEL and provides independent research and development activities in cooperation with other government agencies, private companies, universities, and non-profit organizations.

PROPOSED ACTION: DOE Idaho Operations Office proposes to expand and upgrade facilities at the Idaho National Engineering Laboratory (INEL) Research Center (IRC) located in Idaho Falls, Idaho. Expansions and upgrades would include constructing a research laboratory addition on the northeast corner of existing laboratory building; upgrading the fume hood system in the existing laboratory building; and constructing a hazardous waste handling facility and

a chemical storage building. The DOE also proposes to expand the capabilities of biotechnology research programs by increasing use of radiolabelled compounds to levels in excess of current facility limits for three radionuclides (carbon-14, sulfur-35, and phosphorus-32).

The proposed facilities and facility upgrades and modifications would accommodate program consolidations and increase operational efficiency. The proposed research laboratory wing would be located on the northeast corner of the existing laboratory building. The addition would be a steel frame structure similar to the existing facility, and accommodate 12 to 16 research scientists in 12 modular laboratory work stations. The floor plan would consist of an open laboratory configuration with a modular laboratory design, three chemical storage rooms for materials being used in the laboratories, an extension of an existing hallway, and a storage/receiving area. Fume hoods would discharge through a dedicated stack or series of stacks, not tied to the existing ventilation system in the IRC laboratory building.

The proposed upgrade of the fume hood system would increase the capacity of the exhaust air system in the existing laboratory building, enabling all hoods in that building to operate simultaneously.

The hazardous waste handling and chemical storage facilities would be single story buildings. The hazardous waste handling building would provide a safe and secure area for short term accumulation of hazardous wastes, prior to

shipment. The chemical storage facility would enhance safety by providing areas for storage and physical isolation of different classes of bulk chemicals.

The biotechnology research program at the IRC proposes to increase the use of radiolabelled compounds as tracers in experiments studying metabolic pathways and reaction rates. The use of radiotracers would ensure that the biotechnology program maintains its state-of-the-art technological position. The maximum proposed inventory of radionuclides at the IRC (in addition to 10 CFR 20 Appendix C quantities and sealed sources) would be 30 mCi, comprised of 10 mCi each of carbon-14 (^{14}C), sulfur-35 (^{35}S), and phosphorus-32 (^{32}P). Radioactively labelled amino acids, sugars, nucleotides, sulfates, phosphates, and other organic substrates would be used in research programs investigating and enhancing desirable biochemical processes. All radiotracer studies would be carried out in an existing IRC laboratory equipped for handling radiolabelled materials.

ENVIRONMENTAL IMPACTS: The proposed action would have minimal impact on the existing environment. The proposed facilities would be located within the boundaries of the existing 14.3-hectare (35.5-acre) IRC site. No endangered species, critical habitats, or significant biological, archaeological, or cultural resources would be affected by the proposed action. Soil and vegetation at this location were extensively disturbed by agricultural pursuits for many years prior to construction of the existing facilities. No significant impacts to human health or the environment are expected to result from construction and operation of the proposed facilities.

Water Resources: The proposed research laboratory wing would add a maximum of 10% additional volume to sewer effluents from the facility which constitute less than 0.2 % of the wastewater treated at the City of Idaho Falls Wastewater Treatment Plant. This minor increase in wastewater volume would not adversely impact the treatment capabilities of the City of Idaho Falls Wastewater Treatment Plant.

Because the storage areas of the chemical storage facility would not be connected to the Idaho Falls sewer system, the research laboratory addition and hazardous waste handling facility would be the only proposed facilities from which chemicals might be released to wastewater treated at the City of Idaho Falls Wastewater Treatment Plant. Releases from the research laboratory addition would be similar in nature to those from the existing IRC laboratories. Under normal operating conditions, no biohazardous materials would be discharged to the sewer from these laboratories. Liquid effluents from the hazardous waste management operations are currently released from the existing research laboratory building. IRC hazardous waste management operations, including activities resulting in liquid effluents, would be relocated to the new hazardous waste handling facility. All wastewater would comply with City of Idaho Falls Sewer Regulations. To ensure ongoing compliance with applicable laws and regulations, effluents from laboratory sinks would be incorporated into the existing IRC monitoring program. This monitoring program continuously monitors the pH of liquid effluent having the potential to exceed limits indicated in the Idaho Falls Sewer Regulations. Effluent would be detained in a 5,400 gallon holding tank in the event of a pH

excursion or inadvertent release of a prohibited material. Monthly samples from liquid waste streams leaving INEL facilities, including the IRC, are also collected and analyzed to provide verification of compliance with discharge requirements.

Air Quality and Health and Safety Risks: Nonradiological atmospheric pollutants would be released from the proposed research laboratory addition, the hazardous waste handling facility, and the chemical storage facility. These emissions would be produced from chemical evaporation and combustion of natural gas for heating. These emissions would not result in a significant increase in ambient concentrations of volatile organic compounds or ozone. A permit-to-construct would be submitted to the Idaho Air Quality Bureau for each new building that would release atmospheric pollutants and construction would not commence without state approval.

Radiolabelled compounds would be used in biotechnology research and experimentation carried out in the existing laboratory building. The quantities of radionuclides used in these experiments would be measured in microcurie (mCi). Under normal operational conditions, no radionuclides would be released to the environment. The maximum inventory of radiolabelled compounds related to the proposed expansion would be limited to 30 mCi, comprised of 10 mCi each of ^{14}C , ^{35}S , and ^{32}P . As low as reasonably achievable (ALARA) goals for workers at the IRC would not change under the proposed action. Fewer than 50 workers are anticipated to be associated with biotechnology programs using radiolabelled compounds. No adverse health

effects are anticipated in workers as a result of use of radiolabelled compounds as metabolic tracers in biotechnology experiments.

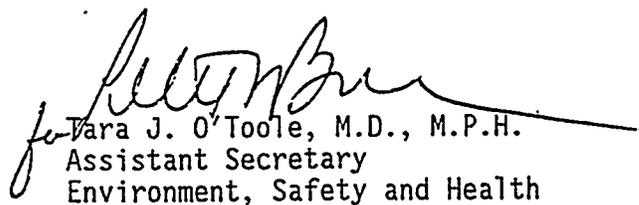
ALTERNATIVES: Two alternatives to the proposed action were considered in the EA.

No Action Alternative: The no action alternative is continued operation of the existing facilities. Under the no-action alternative, some research projects would need to be eliminated or delayed due to lack of space. Research in existing laboratories would continue, but the efficiency of these activities would not improve without upgrading the fume hoods. State-of-the-art techniques in biotechnology research would not be available to IRC researchers. Operational safety at the IRC would not be increased if hazardous waste operations and bulk chemical storage were not moved to self-contained facilities. Under the no-action alternative, the efficiency and safety of existing IRC operations would not be improved.

Develop the Facilities at an Alternate Location: Several sites for in-town facilities were studied in detail at the time of construction of the existing facilities. The location of the IRC was selected because it complies with the Idaho Falls zoning requirements and offers convenient proximity to other INEL installations, sufficient room for expansion, and minimal site development impacts. Developing the proposed facilities at a different location while leaving the remaining land at the IRC undeveloped would not be an optimum use of land resources in the area. No environmental advantage would be gained by developing and operating the proposed facilities at an alternate site.

DETERMINATION: Based on the analyses in the EA, the DOE has determined that the proposed action does not constitute a major Federal action significantly affecting the quality of the human environment, within the meaning of the NEPA. Therefore, an EIS is not required.

Issued at Washington, D. C., this 18th day of March, 1994.


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Environment, Safety and Health