TO: Those listed
From: E. Savick

Oct. 20, 1989

Attached is draft F Use 1 on TRUAPS. Please review & provide comments to me by Mon 10/23 11AM. Thank you
(our input to this DOE document)

Eli

George Sherwood (17Q/12E) developed the following FNSF for Phase 1 of the TRUAPS program. Please review and give me any comments verbally or by FAX by Monday, Oct. 23, 1989.

Ken Zuccherano
(415) 273-6150

Those Listed:
R. Lance
R. Gay
M. Gabler
✓ R. Tuttle
FINDING OF NO SIGNIFICANT IMPACT
TRUMP - S PROGRAM
SANTA SUSANA FIELD LABORATORIES (SSFL)
VENTURA COUNTY, CALIFORNIA

The Department of Energy has prepared an Action Description Memorandum for the proposed program and compared its environmental impacts to those analyzed by the U.S. Nuclear Regulatory Commission in an Environmental Assessment (NUREG-1077, June 1984) for the licensed facility in which the program will be carried out. Based upon the results of these comparisons and analyses, the Department of Energy 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 National Environmental Policy Act of 1969, 42 U.S.C. 4321 et seq. Therefore, no environmental impact statement is required.

The proposed action is to approve the portion of the Rockwell International (RI) TRU Management by Pyroprocessing - Separation (TRUMP-S) program that performs research studies on transuranic (TRU) elements. The objective of the present portion (Stage I) of TRUMP-S is to develop fundamental chemical and electrochemical data for rare earths and actinides in molten salt/cadmium systems. The proposed work involves gram-scale experiments with TRU materials. The studies will include some materials (cadmium and silver) defined as hazardous under the Resource Conservation and Recovery Act (RCRA) and therefore will generate small quantities of mixed waste.

The goal of TRUMP-S is to develop a practical process to separate TRU materials from PUREX waste. The process may also have direct applicability to pyrochemical recycling of a variety of spent reactor fuels (i.e., those from LMRs, HTGRs and LMRS).

The program is a cooperative effort among Japan, RI and DOE with Japan providing most of the funding (about REDACTED), RI conducting the research and development of the separation process, and DOE providing the use of facilities at ETEC, the use of some materials, and the storage and disposal of the TRU waste.

Stage I of the TRUMP-S program, planned to be completed by 31 March 90, will generate less than 7.5 cu. ft. (one 55-gal drum) of TRU-mixed waste 7.5 cu. ft. (one 55-gal drum) of low specific activity (LSA)-mixed waste from operations, and 7.5 cu. ft. (one 55-gal drum) of LSA waste from clean up operations.

Alternatives considered were: conduct program at the RI Hot Laboratory (RIHL), conduct program at a national laboratory (e.g., ANL-West), conduct program at another industrial contractor's facility, conduct program at a non-USA facility, and do not conduct the program.

The program is to be conducted at the RIHL, Building TC20, Santa Susana Field Laboratories (SSFL). The work to be accomplished with the actinides is identical to the work being accomplished with non-radioactive rare earth elements.
earths in Building T023, SSFL. The experimental set up, the measurements being made, and the approach to data analysis have all been demonstrated by the T023 work. The only significant differences between the T020 and T023 work will be the use of radioactive materials, and waste handling and storage. A trained staff is available to perform the experiment and to reduce and analyze the data. No new experimental facilities are required, since Building T020 is adequate for this use. Suitable waste handling and storage facilities exist at SSFL.

The RIHL and Building T023 are located in the Simi Hills of Ventura County, California. The nearest residence to the RIHL and Building T023 is approximately 1 1/2 miles away, and the Rockwell working population within a radius of 1/2 mile is approximately 200. The population within 5 miles of the SSFL site is approximately 52,000.

Operation with TRU materials will be conducted in an inerted glove box in an atmospherically controlled room in the RIHL. TRU will be processed with the maximum amount of TRU material in process at one time of approximately one gram. TRU materials to be processed are neptunium, plutonium and americium. The total quantities of actinide material to be procured for this program are: 75 g depleted uranium, 5 g plutonium, 4 g neptunium and 4 g americium. TRU will be stored in their shipping containers in Building T064 until required for test, and then stored in the RIHL immediately prior to use.

Effluents from the glove-box are triply filtered via HEPA filters in the RIHL before release to the atmosphere. No radioactive gases will be produced during TRUMP-S tests; therefore, special gas cleanup systems are not required. Effluents from the RIHL in the past, during which multikilogram quantities of radioactive material have been handled, have been consistently a factor of 10,000 below EPA limits.

Planning of the experiment will be such as to ensure exposure of workers meets the As Low As Reasonable Achievable criterion. The program to monitor individual radiation exposure is in place. The individual and group exposure anticipated during the course of this work is well below state and federal regulations. It is anticipated the group dose will be less than 2 person-rem. Exposure to the public will be insignificant.

The project will be periodically inspected by NRC as part of the license for Special Nuclear Material (SNM). The contractor (RI) will perform a safety analysis and walk through of the process. DOE will review the safety analysis. The Atomics International Radiation Safety Committee will conduct a safety analysis review. The tests proposed for the glove box in the RIHL are essentially identical to those tests conducted in Building T022 using non-radioactive rare earth elements. All conventional safety issues (e.g., thermal burns, electric shock, and the like) have been resolved in preparing for the non-radioactive work with the rare earth elements.

The TRUMP-S Program will involve a maximum of 5 grams of plutonium, and the facility was evaluated and licensed for up to 2.0 kilograms of plutonium in irradiated fuel (corresponding process limits are 1 gram and 1.0 kilogram). Accidental criticality will not be a concern for the TRUMP-S program, since the volume of material involved is too small to cause criticality in the entire process. Accidental criticality will be a concern in the glove box, however, and will be prevented by redundant shielding and control of supplies. Accidental criticality is expected to be minimal.
quantity of plutonium would be accidentally released, without filtration,
the maximum offsite 50 year dose commitment would be only 5 rem (lung),
well within standards for accidental releases.

Operations have been reviewed to minimize waste generation. The glove box
will be frequently cleaned and operated in a mode to minimize waste
generation. The anticipated disposal site for the TRU waste drum is WIPP.
Until the waste can be shipped, the TRU waste will be stored at RI. RI is
currently storing eleven 55-gal drums of TRU waste in Building T075, at the
DOE Radioactive Material Disposal Facility (RMDF); SSFL. The addition of
one 55-gal drum in RMDF does not result in the exceeding of allowable
limits for storage in this facility. The requirements for packaging,
storage, and monitoring of TRU wastes for temporary storage are clearly
documented and can be met by RI.

LSA waste will be shipped to Hanford for disposal. Mixed-LSA waste will be
stored at RI until either Hanford or NTS are approved to receive this
waste. Funding for the disposal of waste from this program has been
identified in the DOE 5-year plan.

SINGLE COPIES OF THE ACTION DESCRIPTION MEMORANDUM ARE AVAILABLE FROM:

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Peter N. Brush
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