

68-117 IX.D (1) [DOE has long history of secrets and lies about its nuclear operations.] Concerned Citizens for Nuclear Safety filed a Clean Air Act suit against DOE for falsifying its radioactive emission reports at the Los Alamos National Laboratory (LANL). CCNS discovered that DOE's reports had the exact same numbers over successive years. The Federal Court forced DOE to pay \$600,000 over five years for independent monitoring to ensure compliance with the Clean Air Act. EPA and the State of New Mexico had simply been rubber stamping LANL's emission reports.

It is our opinion that the risks of restarting of the Calciner, in order to determine a technological proof of concept for high-temperature calcination, are unacceptably high for the residents, workers and the environment. EPA and the State of Idaho should perform a through review of this situation. DOE is simply taking advantage of a regulatory loophole to perform experiments that they won't be able to do after June. What makes these experiments safe now, when after June they won't be considered safe in the context of compliance with new Clean Air Act standards?

The restart of the Calciner poses the same problems as the Plutonium Incinerator. They aren't tracking the contaminants of concern. It is not enough to ask if they are monitoring, but what are they monitoring for? The Calciner offers a real-life example of the nonexistence of regulatory enforcement of environmental laws on the part of the State and the EPA. By allowing DOE to operate the Calciner for 18 years without a full RCRA permit offers the public insight into what can be expected with the Plutonium Incinerator compliance with regulations.]

68-118 X(5)

68-119 III.C(3)

#### Reclassifying Formerly High-Level Waste to Avoid Regulatory Requirements

68-120 V(9)

[The DOE has taken a unilateral position unsupported by any other state or federal agency to reclassify formerly high-level liquid sodium bearing waste to a less stringent waste category of mixed transuranic.] This waste reclassification slight-of-hand issue has serious implications with respect to the Calciner startup and the AMWTP. If the waste is not properly classified, then the appropriate regulations, management, and disposal rules will not be applied.

68-122 V(9)

[The state of Idaho maintains that the sodium-bearing waste in the INTEC formerly the Idaho Chemical Processing Plant Tank Farm is high-level waste. The State's forward in the INEEL High-Level Waste EIS says:]

Reprocessing at INTEC used a three-cycle solvent extraction process to recover highly enriched uranium from spent fuel. Each cycle created liquid waste, as did decontamination activities. DOE's recently adopted Radioactive Waste Management Order (DOE O 435.1) identifies [high-level waste] HLW as liquid produced "directly in reprocessing." Idaho interprets this HLW definition to include waste from the first reprocessing cycle ("non-sodium bearing waste") and the second and third cycles ("sodium-bearing waste"). This interpretation is

consistent with language in the Settlement Agreement that identifies both sodium-bearing waste and non-sodium bearing waste as HLW. In addition, liquid from the second and third extraction cycles was routed to an evaporator before being discharged to the Tank Farm. As such these liquids contain radioactive fission products in sufficient concentrations to warrant permanent isolation in a geologic repository. DOE however maintains that only the liquid from the first reprocessi ng cycle is HLW. [F-2]

There are three main categories of radioactive waste, high-level, transuranic, and low-level. Under each of these main waste categories there are numerous subgroups. Different federal regulations apply to the management and disposal of the different waste categories. Because of this regulatory framework, considerable emphasis must be given to properly assigning the right category or class to a given waste. Unfortunately, the regulations are not as explicit in defining waste categories as one would hope.

The Nuclear Regulatory Commission defines high-level waste by the process that created it, as opposed to specific characteristics. High-level is, (1) irradiated reactor fuel, (2) the waste generated by the processing of irradiated reactor fuel, (3) the solids into which the liquid wastes were converted.

DOE's INEEL high-level waste (HLW) planning document perpetuates this shell game by stating: "The sodium-bearing and other mixed liquid wastes stored in the Idaho Chemical Processing Plant (ICPP) Tank Farm should not be classified and managed as HLW." This sodium-bearing waste constitutes about 3/4 of the total high-level volume (~ 1.4 million gallons) in the ICPP tank farm.

68-123 V(7)

[The Environmental Defense Institute's review of the ICPP's former operator, Phillips Petroleum Co., quarterly reports shows clearly the chemicals used to dissolve the reactor fuel rods were sodium nitrate and sodium hydroxides.] Wastes generated in the fuel dissolution process went to the tank farm. There is no question that this waste meets the Nuclear Regulatory Commission definition of high-level waste.

68-124 V(4)

68-125 V(9)

[The sodium-bearing waste volume in the ICPP tank farm is about 1,397,300 gallons.] DOE's recent attempt to reclassify or delist this high-level waste is illegal because it meets the Nuclear Regulatory Commission definition that includes the waste generated by reprocessing spent reactor fuel and the concentrated wastes from subsequent extraction cycles, or equivalent. High-level waste tank characterization data gained by the Environmental Defense Institute through a Freedom of Information Act request show the plutonium and other transuranic elements in all the tanks (sodium and non-sodium) vary less than an order of magnitude. [This means one of two things. Either the sodium-bearing high level waste is fuel dissolution raffinate, and/or extensive mixing of tank wastes resulted in relatively even distribution of transuranics throughout the tank farm.] Additionally, the tank data show that three previously designated non-sodium bearing tanks (WM-187, 189, 190) now have sodium-bearing waste in them. Mixing

68-126 V(12)

with the tank sediments (heels) will further make the two high-level liquid waste categories' indistinguishable.

Between 1954 and 1963 the Idaho Chemical Processing Plant (ICPP) dissolved two day cooled Materials Test Reactor (MTR) fuel. This fuel reprocessing program was known collectively as the RaLa runs. INEEL's equivalent to Hanford's Green Runs. Over this period, more than 113 separate process campaigns were run for the separation of barium-140 delivered to the Oak Ridge National Laboratory and Los Alamos for military programs. The RaLa campaigns used unique chemical separation processes from other ICPP nitric, sulfuric, or hydrofluoric acid uranium extraction campaigns. "This [RaLa] process involved the dissolution of MTR assemblies in a sodium hydroxide-sodium nitrate solution leaving a precipitate of sodium diuranate and fission products." Early Atomic Energy Commission documents leave no doubt that the sodium-bearing high-level waste in the ICPP tank farm is the result of spent nuclear fuel reprocessing and therefore appropriately designated as high-level. Admittedly, a certain amount of the sodium-bearing waste is from decontamination flushes. However, it is still a product of irradiated reactor fuel reprocessing containing all the characteristics of HLW. DOE's own characterization of the sodium-bearing waste acknowledges that it exceeds the low-level Class C definition because of its high alpha emitter constituents. Uranium and plutonium are alpha emitters.

68-128 v(12)  
68-129 v(4)

[Additionally, DOE's attempt to reclassify the sodium-bearing waste may be a violation of the State Agreement with DOE that orders the Department to calcine all the waste in the ICPP tank farm.] The order states that: "DOE shall commence calcination of sodium-bearing liquid high-level wastes by June 1, 2001. DOE shall complete calcination of sodium-bearing liquid high-level wastes by December 31, 2012." The State Agreement with DOE is clearly a driver for keeping the Calciner operating. Therefore, the State must amend its agreement with DOE so the Calciner can be permanently shutdown.

In a similar effort at the Savannah River Site (SRS) DOE is attempting to reclassify high-level tanks. The Natural Resources Defense Council is petitioning the Nuclear Regulatory Commission to block DOE's reclassification of high-level waste. As of this writing, NRC has not made a decision on the NRDC petition. On January 3, 2000, NRDC filed a petition for review in Ninth Circuit Court claiming that DOE's Order 435.1 on "incidental waste" violates the Nuclear Waste Policy Act of 1982 and that DOE violated NEPA by categorically excluding its promulgation of the regulation from the requirements of NEPA. The Court's findings could have a significant impact on the INEEL Calciner.

#### Consent Orders and the Calciner

##### The first INEEL Consent Order

The first Consent Order issued in 1992 between the State of Idaho, DOE, and EPA, only has a short passage on the Calciner that says: "For the purposes

of the Consent Order only, operation of the ICPP shall be defined as the calcination of high level liquid radioactive waste stored at the ICPP by operation, under normal conditions of the New Waste Calcining Facility." Every six-month DOE is to submit a "report summarizing operations of the ICPP over the previous six months." Nothing is stipulated about environmental emission reporting requirements. The rest of the order deals with minor RCRA violations with the exception that the Tank Farm is not compliant because of no secondary containment. There are 28 separate RCRA violations identified, and on the surface the state looks like it is really being heavy handed with asserting its authority, until you read the individual violations, such as "... demonstrate that the sand blast grit generated from the cleaning of painted objects at the ... Paint Shop was not hazardous waste."

#### Modification of Consent Order

The 1994 Modification of Consent Order "is based upon the district court's amended order in USA v. Andrus dated December 22, 1993." This suit started over DOE's attempts to ship Fort St. Verin, a commercial nuclear power plant, spent fuel to INEEL. The state was successful through the suit in blocking the shipments (NEPA violations) and also requiring an INEEL Site-Wide EIS. This Consent Order states: "DOE shall accelerate activities related to the treatment and disposal of high-level radioactive wastes stored at INEEL by taking the following actions:"

- a. "Calcine all high-level liquid radioactive waste that does not contain sodium on or before January 1, 1998.
- b. Calcine or otherwise process as much sodium-bearing high-level liquid radioactive waste as DOE and the Department (DEQ) mutually agree is practicable by January 1, 1998.
- c. DOE will evaluate and test Freeze Crystallization, Radionuclide Partitioning, and Precipitation the sodium bearing treatment technologies identified by DOE . . . "
- d. Select the sodium-bearing waste pre-treatment technology if necessary, and calcine or processing technology by June 1, 1995. Once technologies . . . have been selected, the Department and DOE will within 90 days enter into negotiations on the construction schedule for any necessary facilities . . . "

#### Second Modification to Consent Order

The Second Modification to the Consent Order dated July 31, 1998 "revises the requirements of the 1992 Consent Order making the Consent Order schedule consistent with the schedule set forth in Section E.5 of the Court Order in United States of America v. Batt, . . . dated October 17, 1995. This modification is also necessary because DOE has not submitted a technically adequate permit application for the Calciner that meets the requirements . . . "

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The Order states: "DOE may continue to operate the Calciner . . . until April 30, 1999. Unless, and until, the Department [DEQ] has issued a hazardous waste permit for its continued operation, after April 30, 1999, the Calciner shall be in standby mode. At such time as DOE must decide to operate or close the Calciner, which shall be no later than June 1, 2000 . . ." DOE must provide either a Calciner closure plan or submit a permit application. "DOE must comply with all applicable permitting requirements IDAPA 16.01.05.008 [40 CFR 264 and 270] prior to operating the Calciner." DOE submitted a preliminary Screening Level Risk Assessment in 1997, and the final Assessment must be submitted by 12/31/98. If you look at the AMWTP permit, the Risk Assessment is only a small part of the current requirements hazardous waste treatment permit.

Third Modification to Consent Order

Third Modification dated 4/15/99 states that the State " . . . may require that DOE immediately cease operation of the Calciner . . . if the Department determines that DOE has failed to comply with any of the following conditions: "

- a. "Continued operation of the Calciner shall not present a hazard to the public health . . ."
- b. "So long as the Calciner continues operation, DOE shall implement a project to sample off-gas emissions . . ." "A key purpose of the off-gas sampling project shall be to support DOE's decision whether DOE will attempt to meet the performance Standards in . . . pending Maximum Achievable Control Technology [MACT] standards." Monthly reporting is required unless on standby. "If these data indicate that the Risk Assessment emissions rate values are not conservative . . . DOE must submit . . . a revised Screening Level Risk Assessment . . ."
- c. "Before June 1, 2000, the Calciner may require a maintenance outage lasting approximately 90 days."

Consent Order Discussion

EDI asked EPA on 2/17 for a copy of the Consent Order. EPA apparently did not have a copy on file to send directly, so EPA had Idaho Department of Environmental Quality fax EPA a copy which they in turn re-faxed to EDI on 2/18. We find it incomprehensible that EPA did not have a copy of such an important document on file, but tragically consistent with EPA's lack of engagement in the regulatory process.

The State waited until 1998 until bringing up the question of RCRA permitting the Calciner. The definitive question of RCRA jurisdiction occurred in the 1987 federal court decision that found that DOE's mixed hazardous / radioactive waste was to be regulated under RCRA. [The high-level liquid waste in the Tank Farm is considered "mixed hazardous waste." Thirteen years after finally being forced to admit that its mixed waste came under RCRA jurisdiction,

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DOE still is not complying with the legal requirements, nor has the State or EPA adequately exercised their regulatory authority.]

The State allows DOE's Calciner to continue to operate by giving repeated extensions right up to the federal Clean Air Act (CAA) MACT deadline without a full operating permit. The interim status provisions in the law are meant to allow some flexibility for the permittee to get into compliance. Thirteen years of extensions would be considered an unreasonable abuse of the interim status provisions in the law.

The State is justifiably concerned about the enormous risk that the liquid high-level waste in the old Tank Farm poses to the Aquifer. [A leak in the tanks could contaminate the aquifer and jeopardize Idaho's primary water source.] Apparently, the State thought the Calciner emissions were the lesser of the evils. [Remember, the State has never really known through independent monitoring what was going out the stack.] DOE continues dragging its collective feet on developing technological waste treatment alternatives to the Calciner. DOE's failed commitments go back to the 1977 INEEL Environmental Impact Statement when promises were made to build a vitrification plant for the purpose of treating the liquid and calcine high-level waste.

DOE beat the 1998 schedule deadline to Calcine the non-sodium bearing waste. This is the type of waste the Calciner was designed to process. It was never really designed to treat the sodium bearing waste because of the different chemical properties. In the mean time DOE built the High-Level Liquid Waste Evaporator (HLLWE) in the Calciner that reduced the volume of the Tank Farm by some 300,000 gallons. The HLLWE is one of the operations that the Defense Facility Safety Board considered unsafe and objected strenuously to DOE's approval to a bogus Operational Readiness Review for startup. See Exhibits.

The bottom line is DOE had more than two years (1998-2000) to "collect data to determine if it can meet new Clean Air Act MACT regulations" since completing calcining the non-sodium bearing waste. Clearly, DOE is still trying, unsuccessfully, to tweak an old system, never designed to process sodium bearing liquid high-level waste, to meet the new regulations. Given that the State has not required quantifiable performance standards or specific contaminate of concern monitoring, is this the model the public can expect with the AMWTP?

KYNF and EDI rigorously petition DEQ and EPA to block restart of the Calciner, and delay permitting the Plutonium Incinerator until there is a thorough investigation into the Calciner regulatory oversight.

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Given these circumstances, Keep Yellowstone Nuclear Free and the Environmental Defense Institute have several critical questions which are germane to restart of the Calciner and the granting of a RCRA/Clean Air Permit for the plutonium incinerator. They include:

- 68-137 III.C(3) 1. Can the Calciner restart under existing permit extension? If so are there any restrictions on the extension?
- 68-138 VIII.B(6) 2. Are they monitoring real time . . . if so for what and where in the system? Are they taking periodic grab samples . . . if so how often, for what and where in the system?
- 68-139 VIII.B(6) 3. Is there any independent sampling/monitoring of Calciner emissions . . . if so, for what, where, how, and when? How will compliance with NESHAPS be confirmed? Has EPA conducted independent review of State oversight enforcement. If so, where is the documentation?
4. What is the purpose of the four-month campaign?
5. What waste will be processed? What are the wastes characteristics including volume?
6. What are the anticipated source terms of the campaign, and how will they be verified?
7. What is the test run protocol, and has there been an Operational Readiness Review for this startup?
8. What are the unresolved nuclear safety issues?
9. Is the increase in the incineration temperature to 600 degrees C within the safety basis authorization for this facility?
10. Has there been an accident analysis done involving the incineration of HLW at this facility at the higher temperature of 600 degrees C?
11. Has the Defense Nuclear Safety Board reviewed the safety preparation for this effort? If so, what has the Board said about it?
- 68-140 III.C(3) 12. Is it correct to assume that the New Waste Calcine Facility will not be able to comply with the EPA's 1995 Clean Air Act standards to take effect after June of this year?
13. Does the facility have a Continuous Air Monitoring system in the stack?
14. Does the facility measure alpha and nonvolatile beta and gamma emitting radionuclides in the stack before they are released?
13. In preparing for the restart of the Calciner has DOE and its contractor evaluated the history of equipment failures, excessive stack releases, power outages (common mode failures), fires, explosions, problems with conduct of

- operations, and other problems that has plagued this facility over the past decade? Did any of these releases travel beyond the site boundary?
14. How many fires has this facility experienced over the past decade?
15. How frequent were filter and stack release failures for this facility over the past 10 years?
16. How many worker overexposure incidents have taken place at this facility over the past 10 years?
17. What additional technical specifications have been added to mitigate kerosene and organic nitrate explosions?
18. Do Calciner operating procedures still allow for Calciner to run when off-site power is lost?
19. Has the fire suppression system in the Calciner control room been reviewed? If so what were the findings?
20. What is the status of the Distributed Control System upgrades at the Calciner?
21. Have the effects of new emergency exit doors on the ventilation system and contamination control systems been reviewed?
22. Are all criticality warblers supplied with emergency power?
23. Has the battery ventilation system in the Calciner switch gear room been upgraded to meet code and prevent an explosion from hydrogen buildup?
24. How have the work planning process deficiencies been resolved, where the process does not link the controls from permits, such as Radiological Work Permit and the task being performed?

Endnotes

APPENDIX

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- New Information -

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Summary of ICPP (INTEC) accidents 1988 to 1999; See full listing below

Explosions.....2 incidents

Fires.....6 incidents

Monitor Failures.....7 incidents

Worker Contaminations.....18 incidents

Facility and off-site contamination.....5 incidents

System malfunctions.....10 incidents

Filter Failures.....8 incidents

Evacuations.....2 incidents

Accidents at INTEC (formerly Idaho Chemical Processing Plant (ICPP) and New Waste Calciner (Calciner) 1988 to Sept. 1999

Source: U.S. DOE Office of Nuclear and Facility Safety, Operating Experience Weekly Summary

\* 1988\*

October 30: INTEC Explosion resulted Radioactive ruthenium gal release at the Main Stack released .17 curies and caused one fatality.

\*1990\*

Nov. 16; Contamination at 4,000 cpm beta-gamma spread outside a controlled area at ICPP-603

\*1991\*

Jan.29; Calciner stack monitor found out of calibration

Feb.11; ICPP fuel dissolver exploded, spraying three workers with highly enriched uranium and heated nitric acid; a fourth worker was also exposed when he came to their aid. The facility remains closed because of explosion damage and high levels of contamination. Office of Nuclear Safety concluded that the

initial contractor investigation & the corrective actions taken by the DOE/ID were inadequate. [Ryan @ 53]

June 10; Idaho State files RCRA air/water quality violations and fines totaling \$127,793.

June 25; Operator s left hand is contaminated up to 100 mr beta gamma and 3,000 counts per minute beta gamma on his right hand at the Calciner while cleaning liquid sample cell

July 4; Denitrator Off-gas drain malfunction results in highly alpha contamination (Zone-III)

July 8; ICPP worker drained uranium concentrate into unauthorized container. ICPP liquid radioactive leak into glove box violation.

July 25; Calciner activated rapid shutdown system due to off-gas compressor shutdown during power failure

Aug.6; Personal contamination to 500 cpm at ICPP-627 Radiological Materials Area

Aug.6; Calciner shutdown due to plugged filters however it took nearly three hours before operators shut down and no spare filter banks were available during that time.

Sept.13; Calciner failure of off-gas atmospheric protection system (APS) HEPA filters. The HEPA filters, F-OGF-100/101/102 failed a special requested DOP test after nine months of service. When the filters were changed out it was discovered the filter media had deteriorated. Two of the filters had the filter media missing or partially missing. The third filter's media was intact, but was discolored. Depending on when the filters failed, the APS could have operated for the entire nine months without HEPA filters. ID-WINC-ICPP-1991-1058

Nov.28; ICPP evacuated after radiation alarms sound. [Times News (h)]

Dec.6; Contamination spread in an ICPP-666 Radioactive Materials Area while unloading NRF fuel canister contaminating two workers.

Dec. 22; ICPP-604 Process off-gas System HEPA filter monitors inoperable.

\*1992\*

Jan.6; Inspection found 9 alarms disconnected at the ICPP

Jan.19; ICPP Process Off-gas System blowers failed for two days while Calciner and other operations continued to operate

Jan.24 Calciner exceeded State limits on nitrogen oxide on five different occasions between 6/89 to 1/92

Apr. 1; Unauthorized removal of criticality alarm system warblers at the ICPP.

Apr. 2; Employees forced to stay inside of ICPP due to unplanned radiation release from main stack containing 3 mrem/hr beta-gamma. [ID-WINC-ICPP-1992-0035] Contaminants spread beyond the ICPP boundary fence. Five to six acres had to be decontaminated. Ryan cities flakes the size of quarters falling on 40 acres around ICPP, and DOE sent notice of this incident to Idaho and the Fort Hall Reservation with a cover page erroneously stating "This is a Drill". [Ryan @ 53][also see DOB 4/3/92, stating flakes 2 inches in diameter released] The released radionuclide composition was Cs-137, Sb-125, and Ru-106.

June 25; Personnel contamination to 3,000 cpm beta-gamma at the ICPP Calciner

July 1; Calciner HEPA filter failure due to rapid pressure rise and defective or failed filter material. This incident occurred while spare filter bank was undergoing filter change out and was not available for use. Three hours elapsed before the decision was made to shut down the Calciner

July 18; ICPP Calciner unplanned shutdown due to clogged HEPA filters

July 25; Calciner activation of the rapid shutdown system due to compressor failure

Aug.2; Power failure at ICPP and 70 mph wind storm causes significant building damage;

Aug.19; Personal skin contamination at the ICPP New Waste Calcining Facility

Aug.21; Release of radioactivity from ICPP main stack - 25,000 counts per minute (cpm)

Aug.25; Unauthorized disconnection of alarms in ICPP-637

Aug.28; Personal contamination of 1,200 cpm at ICPP-666 Fuel Storage Area

Sept.1; Loss of stand-by power to evacuation sirens at the ICPP Remote Analytical Lab

Sept.12; Personnel contaminated to 20,000 dpm at the ICPP New Waste Calciner

Sept.17; Power outage at ICPP-604 Waste Treatment and loss of instrumentation and ventilation - these facilities operate the ICPP off-gas emission systems

Sept.18; Loss of contingencies against criticality accidents at ICPP-603 caused by side by side placement of highly reactive fuels;

Sept.21; Personnel contamination to 10,000 dpm in the ICPP-604 sample corridor

Sept.22; ICPP Calciner radiation detection instruments found out of tolerance

Sept.23; Three personnel contaminated to 1,500 cpm at Calciner

Sept.27; Sixteen radiation monitors found out of compliance at ICPP and instead of replacing the monitors managers chose to rescind the compliance order

Oct.21; Loss of control of radioactive material, building contamination to 50,000 dpm at ICPP-603

Nov.15; Personnel contamination to 400 cpm at the ICPP Calciner

Nov.19; Personnel contamination to 10,000 cpm at the ICPP Calciner

Nov.28; ICPP evacuated because of radionuclide particulate releases at CPP-603

Dec.1; ICPP High-level waste tanks WM-101 and 102 vault sump level instrument probes (leak detection) were discovered to be connected to the transmitter in reverse

Dec.27; Kerosene fire in the Calciner Cell of the New Waste Calcining Facility. During cold operations of the Calciner kerosene fuel which had leaked from a Calciner fuel nozzle ignited resulting in a small fire in the Calciner vessel cell floor which burned for about 35 minutes. Nozzle connection was installed improperly (threads reversed).

\*1993\*

Jan.4; Criticality Alarm System Warblers found Inoperable in CPP-651 and 603.

Jan.6; Unsafe entry into ICPP WL-101/102 Tank vaults by health physics technicians

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without proper protection.

Jan 9; New Waste Calciner forced to shut down due to plugged final off-gas filter plugging

Jan.28; New Waste Calciner again forced to shut down due to defective off-gas filters

Mar.9; Calciner worker contaminated to 12,000 Disintegrations per minute (dpm) and other areas of the mezzanine where the worker was were found to be contaminated to 100,000 dpm

Mar.13; Worker contamination to 800 dpm at CPP-604 tank farm

April 15; Contamination released from containers sent to ICPP from Pantex via commercial carrier

\*1996\*

July 22; Five construction workers were contaminated during demolition of the ICPP Waste Calcine Facility. Whole body counts showed 500 mrem internal exposure to Cs-137, Sr-90, Pu-238, and Pu-239. The five workers were not wearing respirators yet were working in the immediate area where another group of workers were cutting and removing piping that contained contamination. LMITCO fined \$25,000 by DOE for violations of nuclear safety regulations under the Price Anderson Amendments Act. [Star 3/11/97]

June 5; Worker exposed to 40,000 dpm of Gd-153, Eu-152, and Co-60 during decontamination of Hot Cell Facility despite wearing a double set of Personnel Protective Equipment. [6/9/97 DOB]

Aug 25; Five workers were exposed to nitrogen oxides while conducting a remote video inspection of underground ICPP Calciner valve box. NIOSH safety limits of 5 ppm were exceeded but the immediately dangerous to life limit of 20 ppm were not exceeded.

Aug 25; State of Idaho Division of Environmental Quality sent DOE/ID a Notice of Non-Compliance for 135 violations of Hazardous Waste Management Act and set penalties at \$892,725.

Sept 19; DOE Office of Enforcement and Investigation issued Notice of Violation under the Price-Anderson Act to Lockheed Martin Idaho Technologies and INEEL Operations Office for six Severity Level III safety violations.

Dec 8; ICPP New Waste Calcine facility maintenance fitter was contaminated after he removed his acid suit in a high contamination area. A radiological control technician measured 8,000 dpm beta/gamma on the fitter's knees, 3,200 dpm beta/gamma on his stomach, and 39,000 dpm beta/gamma on his modesty clothing. The fitter had removed his acid suit during the job because of heat stress caused by inadequate breaks and excessive hours.

Undated winter 1997-98; Managers reported fire caused when an engine overheated and caused a fire because the cooling water drain was plugged with ice which prevented circulation of cooling water through the engine coolant heat exchanger.

\*1998\*

Jan 6; Fire resulted from an overheated diesel powered water pump when the discharge line froze.

Aug.9; INTEC plant wide emergency communications and alarm system failed and the backup power system and battery backup also failed.

Oct.7; Fire Alarms found inoperable at INTEC.

Sept.; DOE Office of Oversight Progress Report September 1998 found that "Workplace safety at INEEL has deteriorated since 1994" and that "corrective actions plan found that deficiencies were not resolved and that lessons learned from previous accidents were not being effectively applied. In environmental management and controls, data indicate weak regulatory compliance and inadequate, short-term, quick-fix solutions. Long term solutions are only in the conceptual stages, with no defined strategies, plans of action, or milestones." "Specifically, one-fifth of all INEEL occurrences in 1997 were related to radiation protection (personnel contamination) and environmental management occurrences have increased by one-third from 1994 through 1997."

Sept.1; INTEC radiation laboratory analysts received internal plutonium-239 exposure from inhalation that measured 0.1 mrem from unprotected work on plutonium-contaminated graphite molds.

Sept.21; DOE fines LMITCO \$55,000 for violation Price Anderson Act resulting from Advanced Test Reactor Critical Facility disabling of the seismic scram subsystem discovered in October 1997.

Sept. ; DOE Oversight Analysis Group issues Office of Oversight Progress Report covering INEEL's non-compliance with environmental regulations, poor implementation of worker safety and health programs and privatization issues. The report cited, "workplace safety performance has deteriorated," "recurring problems in work control and facility authorization basis, noncompliance with

environmental regulations, and cost overruns associated with the Pit-9 project," "INEEL has not established an effective process to pro-actively track and prioritize corrective actions. Further, ES&H functions and activities are not always integrated into programs or work planning." "Worker competence and safety performance are also impacted by the reduction enforce at INEEL since the beginning of integrated management. The reductions have affected the experience level of workers and reduced morale. Since 1994, INEEL has experienced to workplace fatalities, a serious electrical shock, and many unplanned exposures and near misses involving workplace hazards." "Significant weaknesses are also noted in INEEL s environmental management program as shown by the site s having received four Notices of Violation from the State of Idaho for environmental non compliance since 1994, as well as 4 of the 26 DOE Enforcement Actions issued by DOE through June 1998." "In recent years, weakness in work planning and controls have resulted in two Type A accidents as well as many near misses involving workplace hazards. The identified programmatic deficiencies include insufficient worker training, lack of hazard identification and control, and inadequate supervision of work."

Dec.22; Six workers contaminated at the New Waste Calcine Facility incinerator during waste transfer operations. Additionally, two pickup trucks, some road surfaces, and hallway carpets in another INTEC were contaminated when workers left the Calciner.

Undated; INTEC (ICPP) Fuel Element Cutting Facility (CPP-603) HEPA filter failure resulted in outside ground contamination of 131,302 square feet. [Waste Area Group 3, RI/FS page 2-129]

\*1999\*

Jan. 11; New Waste Calciner Facility fire erupted while bringing the Calciner into operation, a flexible, braided stainless steel oxygen hose for the Calciner vessel #4 fuel nozzle failed. This failure resulted in a spray of kerosene mist, which ignited in the cell.

Jan.15; New Waste Calciner Facility incinerator fire in the oxygen/kerosene fuel loop was caused by missing seals. It is believed that absence of these seals allowed oxygen and kerosene to leak, mix and catch fire at Calciner operating temperature

DOE/EH-2 11/30/98 REPORT

INEEL HLW Tanks fail seismic requirements

Status of Previously Identified Issues

Positive Unreviewed Safety Question (USQ) Associated with the Use of the System for Analysis of Soil-Structure Interaction (SASSI) Computer Code at the Idaho Nuclear Technology and Engineering Center (INTEC) - On October 28, 1998, a positive USQ screening was identified for seismic calculations for the interior walls of the rectangular high level waste tank farm vaults at INTEC due the potential incorrect application of the SASSI computer code. On December 1, 1998, a USQ was declared due to the identification of safety analysis deficiencies, in that the interior walls for the Tank Farm rectangular vault, which houses tanks WM-187 through 190, may be over-stressed during a seismic event.

Compressor Explosion Investigation Continues - The investigation team is in the final stages of review of the Waste Experimental Reduction Facility compressor explosion, which occurred on November 11, 1998. Sullair, the equipment manufacturer, recommended two additional tests of the system: 1)verification that the safety relief valve released at the prescribed pressure, and 2)dry run testing of the high temperature shut- off circuitry. The results of oil sampleanalysis reported by Sullair revealed the presence of combustion residue, indicating ignition/fire. No other abnormalities were reported.

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- New Information -

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