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# Radioactive Exchange®

*To promote the exchange of views and information on radioactive waste management*

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## **PROPOSED RULE BASING HLW FEE ON NET ELECTRICITY GENERATED ISSUED**

In the November 7 **Federal Register**, the DOE Office of Civilian Radioactive Waste Management (OCRWM) issued a proposed rule to base the 1 mill per kilowatt hour fee to cover the cost of the HLW program on the net electricity generated by a utility as opposed to the gross generation rate included in the final rule issued in April 1983.

The issuance of the new rule is in accordance with the decision handed down by the U.S. Court of Appeals of the District of Columbia on December 16, 1985 in the suit filed by the Wisconsin Electric Power Co. challenging DOE's decision to base the fee assessment on the gross generation of nuclear generated electricity. (See **Fee** in **the HLW Focus**)

## **CALIFORNIA HEALTH AGENCY REAFFIRMS SUPPORT FOR US ECOLOGY**

The California Department of Health Services (DHS) recently issued a document strongly reaffirming support for US Ecology as the license designee for the State's proposed LLRW disposal facility. The DHS report, signed by Dr. Kenneth W. Kizer, Director of the Department, concludes that the "firm is fully qualified in all categories to serve as license designee..." and "has shown a consistent concern for the integrity of its operations and has maintained satisfactory relationships with the Federal and state regulatory agencies." The DHS also reports that US Ecology is willing to use enhanced disposal technology if directed to do so. (See **US Ecology** pg. 2)

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### **SEE NEW FEATURE -- LLRW VOLUME DISPOSAL UPDATE...**

providing a state-by-state, region-by-region breakdown of the LLRW accepted for disposal at the burial site.

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(US Ecology from pg. 1)

### **Past Practices Found Responsible**

In response to questions raised regarding operations of the firm's disposal facilities at Beatty NV and Hanford WA, the report states that US Ecology is "the oldest and most experienced firm in the Field of low-level radioactive waste management..." and has "successfully operated [these] facilities...without the migration of nuclides in air or water to the degree that it would present a health concern." It is pointed out that the "only fine imposed on the company during its 75 site-years of operation was in the amount of \$10,000 and involved employee misconduct."

A recent report issued by Nevada's Department of Human Resources, stating that US Ecology has "demonstrated a consistent concern for the integrity of their operation and that the State found no significant violations of applicable regulations in recent years," is cited in support of these conclusions.

### **Sheffield, Maxey Flats Operations**

US Ecology's operation of the now closed burial site at Maxey Flats, Ky., and current litigation over the closure of the Sheffield, IL disposal facility is addressed.

On the operation of Maxey Flats, the CA Department of Health Services concludes that on the basis of discussions with officials from Kentucky, US Ecology operated "the site [Maxey Flats] in accord with what were then considered good practices." Furthermore, it notes that both the "State and US Ecology acknowledged responsibility for the conditions and worked cooperatively to implement remedial measures."

With regard to the current litigation involving US Ecology and the Sheffield IL site, the report explains that the suit was filed by the State when US Ecology attempted to return the site to the control of the state, after the facility had reached its licensed capacity. The State contends this was in violation of the terms of US Ecology's lease. However, the report

points out that US Ecology's 1974 operating license "did not contain procedures for site closure and was not required to by the Nuclear Regulatory Commission or the State of Illinois."

### **Use of Enhanced Burial Technology**

The terms under which US Ecology accepted license designee status are based on their proposal to site a shallow-land burial facility meeting NRC's Part 61 regulations. During the past legislative session various attempts have been made to require the use of engineered disposal at the proposed facility. Engineered disposal has also been raised in several other public forums. In response to this concern the Department of Health Services reports that no determination has been made on the use of engineered structures, then adds that US Ecology is "technically qualified to meet any such requirement and has expressed a willingness to employ enhanced technology if directed to do so by the Department." \*\*

### **SE COMPACT STATE WITHDRAWAL RESTRICTIONS, SANCTIONS PROPOSED**

The Southeast Compact's Ad Hoc Committee on Sanctions has developed an approach for consideration by the entire Compact Board to prevent party states from withdrawing from the Compact to avoid being the host of a future regional LLRW disposal site (See EXCHANGE, Vol. 5, No. 17). At a November 10 meeting the Committee agreed to suggest language that could be incorporated into an amended compact or possibly drafted into a contract that would be signed by all participating states.

The suggested language which would amend the withdrawal provisions of the current compact is as follows:

"Any party state may withdraw from the compact by enacting a law repealing the compact, except that no **withdrawal may become effective during the period beginning six years after the opening of the second and subsequent regional facilities and ending with the beginning of the opening of the next regional disposal facility.**"

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## Sanctions Proposed

In order to put some teeth behind the withdrawal restrictions, the Ad-Hoc Sanctions Committee is also suggesting that the Compact Commission be empowered to impose sanctions. Suggested sanctions include requiring the withdrawing state to pay compensatory and punitive damages, forfeit any performance bonds (if such bonds are established as a requirement for compact participation), and giving the Compact Commission the authority to seek injunctive relief.

The Compact Board is to consider these proposals at their Nov. 20-21 meeting in St. Petersburg, Florida. \*\*

## CORRECTION: REPORTED TESTIMONY GIVEN AT B&W INCINERATOR HEARING

The EXCHANGE article "Update: NRC Hearing on B&W Processing Center..." (Vol.5, No. 17) incorrectly reported that B&W's proposed incinerator "should result in a destruction and removal efficiency of at least 9.99 percent of any hazardous compound such as dioxins." The **correct statement** made by Mr. Jack Lauber, Associate Air Pollution Control Engineer for the New York State Department of Environmental Conservation, is that the B&W "high efficiency incinerator and multistage air cleaning system should result in a destruction and removal efficiency of at least 99.99 percent of any hazardous compound such as dioxins." \*\*

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## REPORTS OF NOTE (LLRW)

**Radioactive Contamination of Manufactured Products;** Joel O. Lubenau and Donald A. Nussbaumer, Office of State Programs, U.S. Nuclear Regulatory Commission, Washington, DC 20555. Since 1983 seven instances have occurred of accidental radioactive contamination of steel either manufactured in or imported into the United States. Five of the contamination events went unrecognized by the mill operators and were discovered by others through radiation monitoring conducted for other unrelated purposes. Impacts have included costs to mill operators in the United States for decontaminating their steel plants which have ranged from \$50,000 to more than \$2,200,000. The states, the U. S. Nuclear Regulatory Commission and the private sector have taken steps to further assess the scope of the problem and to improve responses when such incidents occur. The article is a good summary of actions taken by NRC and the states and the program put in place to respond to such instances in the future. The article appeared in **Health Physics**, Vol. 51, No. 4 (October), pp. 409-425, 1986.

**Public Involvement: The Critical Path in Siting Controversial Facilities;** Proceedings of the Nuclear Energy Low-Level Waste Management Program Conference held April 2-4, 1986, Sheraton Hotel, New Orleans, LA. The purpose of the conference was to exchange information on public participation efforts and discuss various mechanisms and techniques for effectively involving the public in decision-making processes. The conference addressed four major topics: lessons from past experiences; mechanisms and techniques for public involvement, conflict resolution, and working constructively with the media. A series of presentations on each topic was followed by questions and discussion among presenters and conference participants.

# Wrap Up (LLRW)

## IN APPALACHIA

The **Pennsylvania Department of Environmental Resources** has initiated a series of public meetings on the proposed state LLRW disposal facility siting bill, draft area site screening criteria and the staff developed proposed criteria to determine a disposal technology. The meetings are to be held on the following dates in the specified locations: **Nov. 17** - Harrisburg; **Nov. 20** - King of Prussia; **Nov. 24** - Williamsport; **Dec. 3** - Meadville; **Dec. 9** - Monroeville. Department staff reports that a siting bill will probably be introduced this month but no action is expected until the next legislative session.

As a result of the recent elections the Governorship is now in the hands of the state Democratic Party. Democratic Governor-elect Casey defeated Republican former Lieutenant Governor Scranton by a margin of about ten percent. The change in administration is not expected to significantly alter Pennsylvania's direction with regard to the Appalachian Compact and proceeding to host a regional LLRW disposal facility. The Compact, as adopted by the State, was the result of a bipartisan effort within the legislature. The siting bill, however, has yet to be acted upon.

During the campaign Governor-elect Casey did allude to convening a series of state-wide hearings before making any final decision on LLRW disposal.

## IN TEXAS

The **Texas LLRW Disposal Authority** is scheduled to meet on November 21 to formally select "two or more" possible locations for the state's LLRW disposal facility. Intensive studies are already underway at three sites which are all located in Hudspeth County (See EXCHANGE, Vol. 5, No. 14). The Board is expected to select two of three recommended locations.

The change in Administration in the state, from Democratic to Republican, with the election of former Governor Clements over current Governor Mark White, is not expected to affect the Authority's program. The newly elected Governor will, however,

be able to replace two of the six members of the Authority's Board in February 1987.

## IN THE ROCKY MOUNTAIN WEST

The State of Colorado and Union Carbide Corporation have agreed on a \$40 million plan to clean up the uranium mill tailings pile at the Urarvan uranium mill site in Southwestern Colorado.

The agreement, if approved by Federal district Judge Jim A. Carrigan, would establish a 15 year reclamation effort. According to the agreed upon terms Union Carbide is to lay a clay cap and 10 feet of soil over the tailings; dispose of over 100 thousand tons of highly soluble crystals in clay pods; and, evaporate over 30 million gallons of radioactively contaminated water contained in ponds along the Colorado River, removing the remaining radioactive solid residue to a safer site.

Union Carbide has agreed to purchase a surety bond to guarantee performance of the work. The state has retained its rights to go back to Court to enforce the terms of the Agreement. Once the site is reclaimed ownership of 200 acres will be transferred to the Nature Conservancy.

## IN THE INDUSTRY

**Westinghouse Hittman Nuclear, Inc.**, reports that the Nuclear Regulatory Commission has approved an equipment Topical Report for the firm's Portland cement-based LLRW dewatering and solidification system. A mobile version of this system is now ready to provide on-site processing. NRC approval of the equipment topical covers the mobile version.

According to Westinghouse's Director of Marketing, Dave Zigelman, the new radwaste processing system "allows for solidification of up to 40 percent more resin waste in a given container compared to previous methods. The new system is designed for truck transport to commercial nuclear power plants for on-site processing. For more information contact Mr. Zigelman at (301) 964-5000.

**DOE's Y-12 Plant** awarded a contract to the

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**DOE's Y-12 Plant** awarded a contract to the **Quadrex Recycle Center** for the removal and decontamination of 75 fork lifts and 35 heavy machine tools. According to information available Quadrex has removed all the equipment from the Y-12 site and is decontaminating it at their Oak Ridge Recycle Center.

**Commonwealth Edison's Dresden Plant** management is now reviewing proposals from several waste processing firms competing for a firm price contract award to remove and dispose of 75 SEA-LAND containers holding a wide range of radioactively contaminated material.

**The Quadrex Recycle Center** reports that **Florida Power and Light** has just agreed to a two year blanket service contract under which the Oak Ridge Firm will remove radioactive "decontaminable" materials from all of the utility's facilities. Under the contract the utility will issue work orders for specific tasks. The first job task has been issued and will probably end up being about \$400,000 worth of work.

**International Technology Corporation (IT)** has commenced construction of an expansion to the Company's Radiological Sciences

laboratory in Oak Ridge, Tennessee. The expansion, expected to be completed by mid-1987, will provide sample preparation, counting areas and additional mixed-waste analysis capabilities together with enhanced computerized sample tracking facilities.

Officials at **Aerojet** report that they are continuing with a development and testing program for their mobile incinerator system. No further official information is available.

#### **ON THE MOVE**

**Paul C. Williams**, formerly Vice President Nuclear Sales of Stock Equipment Co., has formed **PAUL WILLIAMS & ASSOCIATES (PWA)**, 3364 E. Smith Rd., Medina, Ohio 44256. Phone: (216) 723-0915. The company specializes in the sale of equipment and services to the electric power and low level radioactive waste industries. Management and low level waste consulting services will also be offered. PWA is the exclusive representative in the USA for Stock Equipment company's "Quick Dry" System for dewatering resin and filter sludge, and the Stock-Fontijne 1500 Ton Compaction Press System.

# LLRW Volume Disposal Update

## LLRW ACCEPTED FOR DISPOSAL AT BARNWELL, BEATTY AND HANFORD As Reported October 1, 1986

	<u>September</u>	<u>Year to Date</u>		<u>September</u>	<u>Year to Date</u>
<b>Northeast</b>			<b>Rocky Mountain</b>		
Connecticut	3,201.52	42,555.44	Colorado	0.00	1,072.60
New Jersey	3,732.63	28,441.34	Nevada	0.00	0.00
	<u>6,934.15</u>	<u>70,996.78</u>	New Mexico	0.00	0.00
			Wyoming	<u>0.00</u>	<u>0.00</u>
<b>Appalachian</b>				0.00	1,072.60
Pennsylvania	16,823.41	143,402.34	<b>Western III</b>		
West Virginia	0.00	0.00	South Dakota	0.00	0.00
Maryland	960.50	9,701.08	Arizona	<u>0.00</u>	<u>2,240.50</u>
Delaware	45.00	817.11		0.00	2,240.50
	<u>17,828.91</u>	<u>153,920.53</u>	<b>Northwest</b>		
<b>Southeast</b>			Idaho	0.00	0.00
Georgia	5,334.40	37,854.80	Washington	2,880.51	39,990.58
Florida	1,354.00	23,616.50	Oregon	15,916.50	73,877.01
Tennessee	4,578.10	47,775.85	Utah	0.00	2,745.00
Alabama	7,662.10	38,489.50	Alaska	0.00	0.00
N. Carolina	7,610.00	59,773.31	Hawaii	0.00	2,028.84
S. Carolina	9,905.50	85,226.90	Montana	<u>0.00</u>	<u>561.00</u>
Mississippi	1,210.00	10,577.50		18,797.01	119,202.43
Virginia	4,555.00	55,264.13	<b>Unaligned</b>		
	<u>42,209.10</u>	<u>358,578.49</u>	Rhode Island	60.67	156.75
<b>Central States</b>			Vermont	158.00	10,307.50
Arkansas	0.00	4,473.80	New Hampshire	760.50	760.50
Louisiana	1,806.00	15,102.10	Maine	170.00	4,964.00
Nebraska	691.00	16,372.00	New York	5,702.15	89,499.46
Kansas	0.00	1,911.50	Massachusetts	3,939.40	49,998.17
Oklahoma	6,600.00	37,920.00	Texas	0.00	424.80
	<u>9,097.00</u>	<u>75,779.40</u>	North Dakota	0.00	0.00
<b>Central Midwest</b>			California	6,744.95	69,373.46
Illinois	18,879.13	158,907.55	D.C.	<u>0.00</u>	<u>112.50</u>
Kentucky	1,081.10	2,144.61		17,535.67	225,597.14
	<u>19,960.23</u>	<u>161,052.16</u>	<b>TOTALS:</b>		
<b>Midwest</b>				144,045.08	1,253,306.55
Wisconsin	437.02	4,063.12			
Indiana	0.00	0.00			
Iowa	564.10	7,160.60			
Ohio	1,032.50	13,329.90			
Michigan	4,282.00	31,115.41			
Minnesota	2,033.39	20,029.99			
Missouri	3,334.00	9,167.50			
	<u>11,683.01</u>	<u>84,866.52</u>			

# Information Brief

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## INCINERATION OF LOW-LEVEL RADIOACTIVE WASTE AT IDAHO NATIONAL LABORATORY

A brief summary on the operating LLRW facility at Idaho National Laboratory compiled from reports authored by H. A. Bohrer and R. L. Gillins of Idaho National Engineering Laboratory and from presentations made at the Eighth Annual DOE-LLRW Forum.

The Waste Experimental Reduction Facility (WERF) at the Idaho National Engineering Laboratory (INEL) is a waste processing facility that has been established to: (a) reduce the volume of low-level beta/gamma contaminated waste requiring disposal; and (b) develop waste processing technology by providing a facility where full-size processes and equipment can be tried, modified as necessary, and proven for contaminated waste processing during production-scale operations.

At WERF, capabilities have been developed to:

- o Size-reduce contaminated metal at a rate of several hundred tons per year.
- o Melt contaminated metal and cast it into ingots for disposal.
- o Incinerate contaminated combustible material.

In developing this incineration system, the principal design considerations were:

- o To use proven commercially available system components
- o To design the system to handle the large volume of waste, not necessarily the most difficult waste
- o To minimize personnel exposure and adverse environmental impact.

In the interest of economy, off-the-shelf equipment or equipment already adequately proven by others was used where possible.

Since the incinerator started operation at the end of FY-84 it has functioned well, with an overall volume reduction ratio of approximately 140 to 1. To date, no detectable contamination has spread from the incinerator combustion chambers, and no detectable radiation has been released as a result of incinerator operations.

The system has performed as designed and only minor modifications to subsystem components have been required. Some problems have been encountered with failure of baghouse fabric filters, accumulation of unburned, solidified plastic at the lower chamber ash ram housing, and waste burning in the loading chute, but operational and hardware changes have minimized the effects on schedules and system performance.

**A hazardous liquid waste burner system has been installed and is planned for operation after RCRA Pat B permitting is approved.** The facility is increasing acceptable waste radiation levels based on operating experience.

### INCINERATOR SYSTEM DESCRIPTION

The facility includes systems to characterize and convey the solid waste to the incinerator, incinerate the waste, cool and drum the resulting ash, and cool and filter the off-gas.

The combustible waste comes to WERF prepackaged in 2-foot cube cardboard boxes that are lined with 4 mil thick polyethylene bags. These packages provide fixed geometry for the waste portal radiation monitor, and are sized to allow an adequate waste unit feed rate at incinerator design throughput rates. The waste feed and characterization system consists of an automated roller conveyor system with integral stations for monitoring waste radiation

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levels, a standard airport-type x-ray unit for inspection of packages for undesirable contents and a scale to weigh the waste for control of burn rates. A lift and roller conveyor system introduces the waste into the top loading chute of the incinerator.

The incinerator is a commercially available, dual chambered, controlled air incinerator capable of burning 400 lbs per hour of 12,000 BTU/lb combustible material. Although initially intended to incinerate only solid combustible radioactively contaminated wastes, the incinerator has also been designed to accommodate liquid and high viscosity waste forms with minor hardware additions. Principal components include a gravity-fed loading chute that acts as an airlock for introducing waste to the primary chamber, the primary or ignition chamber that acts as an afterburner for the volatile gases generated in the primary chamber, and an ash ram that periodically strokes along the hearth to push residual ash to the rear of the primary chamber and into a cooling hopper.

The loading chute consists of a triple door airlock arrangement. The top hatch is opened, and the boxed waste is loaded onto the upper door of a double internal door arrangement. The lower door is refractory lined to minimize temperature rise in the loading chute. The top hatch is then closed before the bottom two doors are cycled to drop the waste into the primary chamber. This arrangement minimizes the introduction of large amounts of uncontrolled combustion air into the incinerator system and minimizes the potential for backflow during loading operations.

The ash drumming system is located in the basement beneath the incinerator. The system was designed to drum out ash during incinerator operations; but formation of clinkers sometimes causes jamming of ash feed gates. As a result ash is usually manually drummed out during routine incineration chamber inspection. The ash is cooled by circulating air through plenum chambers surrounding and dividing the hopper, and by percolating low-pressure bleed air up through the ash bed. a 55-gallon drum with a rigid polyethylene liner is used to receive ash from the drumming system for storage and subsequent disposal.

The incinerator off-gas treatment system which is an integral part of the facility heating, cooling, and contamination control system, was designed to cool and filter the incinerator effluent before release through the main exhaust stack. The off-gas system is a dry filtered system which cools the incinerator combustion gases by means of both air dilution and an air-to-gas heat exchanger. A dry off-gas system was selected to avoid the need to process a secondary waste stream.

This incinerator system was designed to require a minimum number of people for operation. One person operates the remotely located control panel and another periodically places a number of waste boxes on the semi-automatic waste conveying system. The control console contains all of the necessary indicators, controllers, TV monitors, and annunciators to remotely monitor and operate the system. A supervisor and Health Physics technician make up the balance of the four person crew.

A recent modification to the incinerator system included an auxiliary burner for combusting hazardous flammable liquid wastes in the incinerator lower chamber. The burner is designed to start up on fuel oil from the incinerator oil supply system, then to gradually switch over to liquid waste drawn from shipping drums. This burner system was tested through a demonstration burn but is currently inactive while an EPA hazardous waste disposal permit application is being processed.



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## CONTAMINATION/RADIATION CONTROL

Contamination control for the incinerator operation is achieved by:

1. Maintaining the incinerator chambers at a slight vacuum (-1.5 in. WC) during operations so that leakage is into the chambers,
2. Continuously changing out the room air via a dedicated fan pulling air from the room which is replaced with outside air through a room inlet filter box, and
3. Providing an airlock room between the incinerator room and the high bay personnel area through which both the waste boxes and personnel enter the incinerator room. The incinerator room is routinely monitored to minimize the spread of contamination.

To date no detectable contamination has been found outside of the incinerator chambers. Entry into the incinerator room, consequently, requires no anticontamination clothing or respirators. Regular surveys are made by Health Physics technicians to check for contamination. In addition, the incinerator room is continuously monitored by a Constant Air Monitor (CAM) and Radiation Area Monitor (RAM).

Activity in the bottom ash is relatively low, with occasional particles peaking in the 30 millirem/h range. Entry into the incinerator chambers between burns to clean out the hearth is performed by personnel in full anticontamination clothing and breathing air. Residual activity in the chambers when all ash has been removed is near room background, indicating the refractory is not being significantly contaminated. Activity in the fly ash carried over to the main baghouse has been limited to less than 5 millirem/h.

Radiation exposure to operators due to incinerator operations have been minimal. Health Physics records for the WERF staff shows total estimated on-the-job dose of 0.07 Rem for operations to date. With the current box radiation limit of 10 millirem/h at contact, only 0.3% of the waste boxes have been rejected because of radiation. The average radiation level for all boxes is less than 1 millirem/h at contact.

Contamination control for the ash drumming operation is achieved with redundant barriers for the ash. The ash hopper has two stage gating for controlling drop rates into the drum. The drum and drum liner have separate seals to the ash hopper plate. The glove box and drumming bag provide separate barriers between the drummed ash and the room.

## SYSTEM PERFORMANCE

**Volume Reduction.** A total of 23,464 ft<sup>3</sup> of contaminated waste was processed through the incinerator between September 1984 and February 1986, with over two-thirds of the total being processed in the last four months. The baghouse fly ash and incinerator bottom ash generated in the same time frame was 168 ft<sup>3</sup>. Since the baghouse services other process areas as well as the incinerator, a portion of the baghouse fly ash is not generated by the incinerator. However, assuming all fly ash is incinerator ash, the resulting overall volume reduction ratio is 140 to 1. After individual burns, inspection of the incinerator hearth and baghouse hoppers have shown volume reductions to be near 250 to 1 for waste with high plastic, low-wood compositions.

**Ash Handling System.** The incinerator ash system was designed to cool the ash and allow safe transfer to 55-gallon drums for disposal during incinerator operations. The ash hopper is maintained partially full of ash to insulate the hopper from the lower chamber temperatures. To date, the small volume of ash generated for a normal burn is insufficient to require drumming during incinerator operations. In fact, the ash pile routinely fails to reach the ash chute during a burn. All ash transfers to date have been accomplished without incident or loss of material through the drum/ash system seals. Radiation levels of the drummed ash are in the 5-15 millirem/h range at contact.

Analyses of the incinerator bottom ash for hazardous constituents have been performed. The fly ash has consistently exceeded Resource and Conservation Recovery Act (RCRA) levels for cadmium and lead and the bottom ash has occasionally shown high lead content. Methods are being studied to render the ash nonhazardous.

**Off-Gas System.** The dry incinerator off-gas treatment system was selected because of its low cost and minimum maintenance requirements. The primary concern in the operation of this system is maintaining adequate cooling so that the baghouse filter and HEPA filter material temperature limits are not exceeded. At the same time, temperatures must be maintained above dewpoint levels to prevent condensation of acid gases on the ducting. System temperatures are annunciated for both high and low conditions to aid the operator in maintaining proper levels.

The off-gas is monitored for radiation releases out the stack. To date, no detectable radiation levels above background have been released.

### PROCESS MODIFICATIONS/IMPROVEMENTS

**Liquid Waste System.** A liquid waste feed and burner system was recently installed and checked out to provide WERF with the capability of incinerating hazardous, nonhalogenated liquid wastes, either radioactively contaminated or noncontaminated. WERF incinerator operations were included in a RCRA Part B permit application recently submitted to the EPA for the INEL. Since most of the hazardous wastes generated at the INEL which will be processed by the WERF incinerator are in small quantities, the waste feed system is designed to extract liquids from 55-gallon drums. The burner and feed system are designed with the flexibility to accept a wide variety of liquid wastes with varying physical properties. EPA trial burns are currently scheduled for the fall of 1986.

**Off-Gas Monitoring.** To aid in the characterization of incinerator off-gas constituents and to comply with EPA requirements for hazardous waste processing, several additional off-gas monitoring systems will be added at WERF. A chloride monitor is planned to evaluate the extent of halogenated materials contained in the WERF combustible waste stream. A stack oxygen monitor and a CO monitor will be added in support of the RCRA Part B permit activity.

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