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Tri-Party Agreement

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RECEIVED
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EDMC

Subject: **PROGRESS UPDATE ON N-AREA SHORELINE "SKYSHINE ABATEMENT"**

Dear Mr. Pollett,

As part of Environmental Restoration Refocusing, the U.S. Department of Energy (DOE), the Washington State Department of Ecology (Ecology) and the U.S. Environmental Protection Agency (EPA) agreed to establish Tri-Party Agreement Milestone M-16-12A to "Complete implementation of skyshine abatement for the 1301-N and 1325-N Liquid Waste Disposal Facilities (LWDFs)" by September 30, 1995.

As a prerequisite to completing this action, DOE submitted a letter report to Ecology and EPA for skyshine abatement assessment, dated April 21, 1995. DOE's recommendation was a "no action" alternative for skyshine abatement measures at the 1301-N / 1325-N cribs. This recommendation was based on the evaluation of resultant doses associated with realistic and conservative public exposure scenarios which indicated the most stringent applicable exposure action limit of 25 mrem/yr/person would not be exceeded, even if 10 Code of Federal Regulation 834 is promulgated.

As discussed in the **Comments and Responses to the Tentative Agreement on Environmental Refocusing** document, recent information indicated that the Emergency Dump Tank (EDT) at N Reactor is in fact a significant contributor to skyshine along the N Area shoreline. On July 26, 1995, DOE, Ecology and EPA negotiated to close Tri-Party Agreement milestone M-16-12A, as "no-action", and established a new milestone M-16-12F to "Complete dose reduction activities at the Columbia River shoreline by decontamination of 1304-N Emergency Dump Tank, by September 30, 1995. The primary objective of the 1304-N EDT Decontamination Project was to reduce the dose rate contribution of the EDT by 90% of the current average dose rate.

DOE, Ecology and EPA are pleased to report that Tri-Party Agreement Milestone M-16-12F for reduction of dose rate at the shoreline due to skyshine from the Emergency Dump Tank was met 17 days ahead of schedule.

As shown in Table 1, the pre-determined interior tank baseline average contact dose rate (BACDR) was determined by averaging 14 readily repeatable data points. Based on these data points, the pre-decontamination BACDR was established at 253mR/hr. The post-decontamination interior tank readings were

repeated at the 14 pre-determined data points used to established the final average contact dose (FACDR) rate of 7.1mR/hr. Based upon the results, interior decontamination efforts have proved to be greater than 97 percent effective (FACDR @ 7.1/BACDR @ 253.6 or 97.2%).

As shown in Table 2, the pre- and post- decontamination dose rate values were measured due north from the river side and three feet from the tank at chest height. The pre- and post - decontamination dose rates at this location recorded at 9mR/hr and 1mR/hr, respectively. Using Microshield software, river shoreline dose rates for pre- and post - decontamination, approximately 100 feet from the EDT, were estimated at 0.077 mR/hr and 0.014 mR/hr, respectively, representing 82 percent reduction.

DOE determines that 97.2 percent reduction in interior tank dose rate, combined with 71 percent estimated reduction at river shoreline, will reduce exposure to workers at the 100-N Area and public at the river shoreline of the Hanford Site. Further, to determine dose rate reductions from source term removal at the EDT, a trend analysis of Thermoluminescent Dosimeters (TLD) results will be performed. This analysis will provide historical data in three month increments from the 3 TLD sites near the EDT for the past 18 months, up through September 13, 1995. A graphic representation and data table will be available in November 1995.

As part of the EDT decontamination effort, DOE was to apply new technology for tank decontamination. It was determined, however, that demonstration of new chemical decontamination technology was too costly; manual decontamination methods proved to be more successful than originally anticipated; and, the desired reduction in dose rate was achieved without the need for chemical decontamination methods. DOE will remain strongly committed to continue to pursue new decontamination methods.

Please feel free to contact us if you have any questions. We look forward to your input and continued participation in Hanford cleanup activities.

Sincerely,

Roger Stanley
Hanford Project Manager
State of Washington
Department of Ecology

Doug Sherwood
Hanford Project Manager
U.S. Environmental
Protection Agency

Paul Dunigan
Hanford Project Manager
U.S. Department of Energy

Attachment

Attachment

Table 1: Radiological Survey Results

Sample		Baseline	Final
1	12′ above floor, directly below manway,	70	20
2	12′ above floor, azimuth 330	85	5
3	6′ above the floor, azimuth 270	85	4.5
4	6′ above the floor, azimuth 240	240	5
5	12′ above the floor, azimuth 210	200	9
6	6′ above the floor, directly opposite manway,	165	10
7	12′ above the floor, azimuth 150	100	9
8	6′ above the floor, azimuth 120	120	7
9	12′ above the floor, azimuth 90	210	4
10	10′ above floor, elbow of 30" overflow pipe	920	13
11	4′ inside mouth of sparger pipe, azimuth 45	390	3.5
12	4′ inside of mouth of sparger pipe, azimuth	350	3.5
13	4′ inside of mouth of sparger pipe, azimuth	380	4
14	4′ inside of mouth of sparger pipe, azimuth	235	2.5
	Average Contact Dose Rate	253.6	7.1
	Percent Reduction		97.2%

Table 2: 100-N Shoreline Dose Rates

Distance from Tank	Baseline Dose Rate (mR/hr β-γ)	Final Dose Rate (mR/hr β-γ)	Percent Reduction
3 ft.	9	1	89
100 ft. (*)	.077	.014	82
150 ft.	.035	.0029	92
200 ft.	.019	.0056	71

* Distance to river shoreline

Dose calculations are based on pre- and post - decontamination β-γ contact surveys outside the EDT at 3 feet from the east exterior wall. The values at 100, 150 and 200 feet from the tank were calculated using Microshield software, version 4.2.