



Shell Oil Company
Interoffice Memorandum

MAY 11, 1987

FROM: C. L. HARING, INDUSTRIAL HYGIENIST, S&IE, HS&E
TO: H. L. REES, MANAGER, BUILDING SERVICES, INFORMATION CENTER
SUBJECT: ASBESTOS MONITORING IN COOLING TOWER ENCLOSURE

Per your request, monitoring for asbestos was conducted in the subject area on February 19 and March 4, 1987. Personal and area samples were collected during routine maintenance duties and simulation of the cooling tower cleaning procedure. In addition, a sample of residue from the tower sump was collected and analyzed for asbestos content.

On February 4, the duties of the maintenance worker, Nathan Vallie, consisted of four observation tours in the cooling tower enclosure. Each tour lasted approximately 30 minutes. Vallie added chemicals to the cooling tower water and climbed to the top of the tower to check the fans once during the shift. The rest of the shift was spent on maintenance in the air handling rooms and cafeteria.

On March 4 a contract laborer, R. D. Teague (Marley Construction), simulated a cooling tower cleaning procedure. The procedure consisted of removing transite panels from one cell of the tower frame, laying them across saw horses and scrubbing them using a wet technique to remove dirt and water deposits. Thirty panels were involved. Although not observed throughout the day, Teague claimed to have repeated the process 33 times. Each panel is approximately 3 X 8 feet. Teague wore a half-face piece dual cartridge respirator which, after the job was completed, was observed to be for organic vapors and not particulate aerosols. (Organic vapor cartridges are not effective against asbestos.) An inspection of the tower in December 1986 (memo from C. L. Haring to H. L. Rees, January 28, 1987) indicated that the transite panels appeared basically sound and were not becoming friable. Little mechanical damage to the panels was noted.

Monitoring results are tabulated below.

LAM 019418

Date	Name	Sample Time (min)	Type	Activity/Area	Result (f/cc)
2/19/87		425	Personal	Routine duties, check fans	<0.01
		430	Area	West end of cooling tower, 5 ft. from ground.	<0.01

<u>Date</u>	<u>Name</u>	<u>Sample Time (min)</u>	<u>Type</u>	<u>Activity/Area</u>	<u>Result (f/cc)</u>
		430	Area	Cooling tower stair on west end, 12 ft. from ground.	<0.01
		425	Area	Top of cooling tower	<0.01
3/4/87		360	Personal	Cleaning panels from cooling tower cell	<0.01
		357	Area	East end of cooling tower during panel cleaning, 10 ft. from work station.	<0.01
		355	Area	South side of enclosure about 20 ft. from work station.	<0.01

The residue collected in the cooling tower sump contained no detectable asbestos (<1.0%).

The personal and area sample results are well below the current OSHA standard, 0.2 f/cc (fibers/cubic centimeter) for an 8-hour time weighted average. This suggests that employees working in the area under routine conditions are not likely to be exposed to levels exceeding the OSHA standard. However, it would be prudent on a precautionary basis for contract workers engaged in the tower cleaning activity to wear appropriate protective gear, including respiratory protection as specified by the OSHA standard.

The residue from the tower sump will not require special handling since it contains less than 1% asbestos.

Industrial Hygiene Services would like to conduct monitoring during the cleaning operation if and when it begins.

If you have questions, please call me at 241-2371 or Jerry Ransdell at 241-6532.

C. T. Dainy

CLB:BVR

cc: J. D. Ransdell/H. L. Kusnetz
HS&E-AS (2)

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