

**Shell Oil Company • Shell Chemical Company**

Interoffice Memorandum

NORCO MANUFACTURING COMPLEX

JANUARY 27, 1987

FROM: INDUSTRIAL HYGIENE TECHNICIAN  
TO: C. J. GALLIANO  
SUBJECT: ASBESTOS MONITORING

The Occupational Safety and Health Administration (OSHA) has revised asbestos handling requirements per its Construction-Industry Standard, 29 CFR 1910.58, which specifically applies to asbestos abatement type activities. In addition to various work practice changes, the Permissible Exposure Limit (PEL) has been lowered to 0.2 f/cc (fibers per cubic centimeter of air).

To further assess Norco Manufacturing Complex's compliance to this Standard, Industrial Hygiene monitored the recent asbestos abatement job at ST Unit to determine employee exposure and to evaluate the overall effectiveness of the employee's work practices. All individuals monitored were outfitted with high flow pumps equipped with mixed cellulose ester filters. The filters were sent to the Industrial Hygiene Lab at Westhollow Research Center for fiber count analysis. Insulation Technologies, Incorporated, the asbestos abatement contractor, provided complete personal protective equipment for their employees as specified by NMC's procedures. This included cartridge respirators, disposable coveralls, boot covers, hoods, and gloves.

The attached tables summarize the results of this monitoring efforts. Of 25 personal samples collected, three exceeded the 0.2 f/cc TWA PEL, these being 0.27, 0.30, and 0.28 f/cc TWA. Basis these exposure levels, certain work and hygiene practices would be mandated by the revised OSHA Standard.

For your information, NMC is revising its asbestos handling procedure, a draft of which is being reviewed by Environmental, Health, Safety, and Medical, and Maintenance.

Please forward the attached results to the appropriate Insulation Technologies supervision. Contact me if you have any questions or comments -- on this matter.

*Terry C. Harper*

T. C. Harper

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Attachments

cc: W/Attachments  
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File 770-02-00 (RC-Safety-West Site)

NORCO MANUFACTURING COMPLEX  
AIR MONITORING FOR ASBESTOS EXPOSURE LEVELS

CONTRACTOR RESULTS

| DATE     | EMPLOYEE NAME | EMPLOYEE NUMBER | JOB FUNCTION | TIME MONITORED,<br>MINUTES | FIBER/CC<br>RESULTS* | RESP. (c) | REMARKS |
|----------|---------------|-----------------|--------------|----------------------------|----------------------|-----------|---------|
| 11/03/86 |               |                 | Insulator    | 480                        | 0.11                 | Y         | (1)     |
| 11/03/86 |               |                 | Insulator    | 464                        | 0.16                 | Y         | (1)     |
| 11/03/86 |               |                 | Insulator    | 468                        | 0.14                 | Y         | (1)     |
| 11/03/86 |               |                 | Insulator    | 467                        | 0.30                 | Y         | (1)     |
| 11/03/86 |               |                 | Insulator    | 465                        | 0.04                 | Y         | (1)     |
| 11/04/86 |               |                 | Insulator    | 480                        | 0.28                 | Y         | (1)     |
| 11/04/86 |               |                 | Insulator    | 480                        | 0.02                 | Y         | (1)     |
| 11/04/86 |               |                 | Insulator    | 480                        | 0.06                 | Y         | (1)     |
| 11/04/86 |               |                 | Insulator    | 480                        | 0.07                 | Y         | (1)     |
| 11/04/86 |               |                 | Insulator    | 480                        | <0.01                | Y         | (1)     |

REMARKS: (1) Employee was removing insulation from piping and equipment in ST Unit.

\*OSHA permissible exposure limit (PEL) is 2 fibers/cc eight-hour time weighted average (TWA).

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NORCO MANUFACTURING COMPLEX  
AIR MONITORING FOR ASBESTOS EXPOSURE LEVELS

CONTRACTOR RESULTS

| DATE     | EMPLOYEE NAME | EMPLOYEE NUMBER | JOB FUNCTION      | TIME MONITORED,<br>MINUTES | FIBER/CC<br>RESULTS* | RESP. (c) | REMARKS |
|----------|---------------|-----------------|-------------------|----------------------------|----------------------|-----------|---------|
| 10/28/86 |               |                 | insulator         | 472                        | 0.05                 | Y         | (1)     |
| 10/28/86 |               |                 | insulator         | 473                        | 0.22                 | Y         | (1)     |
| 10/28/86 |               |                 | insulator foreman | 471                        | 0.03                 | Y         | (1)     |
| 10/28/86 |               |                 | insulator         | 474                        | 0.06                 | Y         | (1)     |
| 10/28/86 |               |                 | insulator         | 474                        | 0.01                 | Y         | (1)     |
| 10/31/86 |               |                 | insulator         | 478                        | 0.11                 | Y         | (1)     |
| 10/31/86 |               |                 | insulator         | 478                        | 0.13                 | Y         | (1)     |
| 10/31/86 |               |                 | insulator         | 478                        | 0.07                 | Y         | (1)     |
| 10/31/86 |               |                 | insulator         | 480                        | 0.06                 | Y         | (1)     |
| 10/31/86 |               |                 | insulator         | 478                        | 0.05                 | Y         | (1)     |

REMARKS: (1) Employee was removing insulation from piping and equipment in ST Unit.

SHA permissible exposure limit (PEL) is 2 fibers/cc eight-hour time weighted average (TWA).

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NORCO MANUFACTURING COMPLEX  
AIR MONITORING FOR ASBESTOS EXPOSURE LEVELS

CONTRACTOR RESULTS

| DATE     | EMPLOYEE NAME | EMPLOYEE NUMBER | JOB FUNCTION | TIME MONITORED,<br>MINUTES | FIBER/CC<br>RESULTS* | RESP. (c) | REMARKS |
|----------|---------------|-----------------|--------------|----------------------------|----------------------|-----------|---------|
| 11/05/86 |               |                 | insulator    | 240                        | 0.02                 | Y         | (1)     |
| 11/05/86 |               |                 | insulator    | 240                        | 0.01                 | Y         | (1)     |
| 11/05/86 |               |                 | insulator    | 240                        | 0.02                 | Y         | (1)     |
| 11/05/86 |               |                 | insulator    | 240                        | 0.02                 | Y         | (1)     |
| 11/05/86 |               |                 | insulator    | 240                        | 0.02                 | Y         | (1)     |

REMARKS: (1) Employee was removing insulation from piping and equipment in ST Unit.

\*OSHA permissible exposure limit (PEL) is 2 fibers/cc eight-hour time weighted average (TWA).

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