

**Shell Oil Company**
Interoffice Memorandum

FEBRUARY 4, 1986

PLAINTIFF'S EXHIBIT

SH-3408

FROM: K. C. CRAWFORD, HEALTH & SAFETY, MANUFACTURING & TECHNICAL
TO: R. E. GREEN, INDUSTRIAL HYGIENE SERVICES, S&IH, HS&E
SUBJECT: WRMC I.H. AUDIT - NEED FOR REFERENCE INDEX TO PROCEDURES

Your comment in Section 5 of the draft report of your October 1985 I.H. audit (attached) of Wood River Mfg. Complex strikes a note of deja vu. During the April 1983 Health & Safety Review the same observation was made. Review team member John Reynolds created a cross-reference index for the Complex. Copies were left with WRMC in hope that this might aid them. It still is a good idea. I do not know the fate of Reynold's original document at WRMC -- but a copy is attached here for reference.

KCC:bjd

Attachment

cc: W. M. Cunningham
A. D. Ditmar/J. D. Ransdell
C. F. Phillips
H. G. Rollins

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H.S. & E SUPPORT
INFORMATION SERVICES
FEB 5 1 13 PM '86

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ABS-046703

Excerpt from Oct 1985
IH Audit @ WRMC 4

spending about one hour a shift in the plant during monitoring. More time should be spent in observing activities in order to provide more detailed and useful data on the IH sample form. Use of the Comments and Comment Code sections should be increased to provide additional supporting data. Follow-up on higher/lower-than-expected results is good. Additional monitoring is done if investigation fails to determine cause of the extraneous results. In several cases of spills, IH monitoring and potential exposure documentation have been provided.

Rodeheaver maintains the IH sample files. These are well organized and are current. Equipment calibration is done prior to and after monitoring. Calibration data are recorded in a log book. No problems were noted in calibration.

5. Programs, Procedures, Policies

Health and safety programs, procedures, and policies are in use by management and employees at WRMC. IH related procedures which were provided to the audit team included the following:

Asbestos	Radiation and Lasers
Chlorine Systems	Respiratory Protection Program
Hearing Conservation Program	Benzene
PCB's	Embryo-Fetus
	Right To Know (RTK)

The H&S procedures are generally incorporated into operating procedure memoranda. Review of H&S procedures is designated as a line responsibility with H&S input available upon request. The procedure memoranda contain a review date, and list the designated reviewers. Some of the H&S procedures not included in operating procedure memoranda are not readily accessible to the field since they are not in the procedures manuals. This indicates a general lack of awareness of these procedures.

The present system of incorporating H&S procedures into WRMC's operating procedure memoranda helps provide emphasis on the acceptance of H&S as a part of line responsibility. However, the H&S Department has some difficulty in accessing and tracking the H&S content of procedures. A single reference index of all operating procedures with H&S content is recommended. This would afford easier access, review, and update of existing procedures. It is difficult to update a change of existing H&S procedures which may be included, in part, in several operating procedures. An H&S Procedure Manual containing all Complex-wide procedures, such as respiratory protection, hearing conservation, and embryo fetus policy would be a good resource for the H&S Department and the operating units.

DRAFT

LATEST REVISION
APRIL 22, 1983

SAFETY SUBJECTS
WOOD RIVER MANUFACTURING COMPLEX
INDEX AND CROSS REFERENCE

This was compiled
by John Reynolds during
the 1983 H&S Review as
a "consulting service" to
aid WRMC.

Legend:

Employee Handbook - Rules and Regulations (R&R)
Procedure Memoranda (PM)
Audiscan - Audio-Visual Tapes Available for Viewing
Emergency Manual (EM)

A.	Acetylene Cylinders	R&R 103/PM 13.07
	Acid Hood	R&R 74
	Air System	R&R 41/PM 3.07
	Ambulance	EM 1.0
	Ammonia (NH ₃)	R&R 85
	Asbestos Gloves	R&R 68
	Asbestos Handling and Disposal (Audiscan)	PM 11.05
	Automotive Equipment	R&R 36, 97
B.	Balanced Bellows Pressure Relief Valves	PM 4.07
	Bicycles	R&R 38
	Bleeder Valves	R&R 141
	Blinding (Audiscan)	R&R 141/PM 13.06
	Block Valves Under RV's	PM 4.00
	Blower Masks	R&R 76
	Blue Flags and Blue Lights	R&R 151
	Boatswain Chairs	R&R 170
	Bonding Cables	R&R 112
	Breather Valves - Tanks	PM 15.01
	Burning Operations	R&R 99
C.	Canister-Type Masks	R&R 77
	Carbon Monoxide (CO)	R&R 85/PM 3.01
	Caustic Soda (NaOH)	R&R 91
	Chemical Safety	R&R 83
	Chlorine	R&R 85
	Civil Disorders	EM 2.0
	Cleaning Agents	PM 4.05
	Close Calls (Audiscan)	PM 13.11
	Clothing	R&R 65
	Color Code - Gas Cylinders	PM 13.07
	Compressed Gas Cylinders	R&R 102/PM 13.07
	Compressor Shutdowns	R&R 139
	Conservation Bents - Tanks	PM 15.01
	Corrosive Liquids	R&R 89
	Corrosive Liquids (Lab)	R&R 124
	Coveralls	R&R 67
	Crane Operations (Audiscan)	R&R 105

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D.

Departmental Safety Permits	R&R 55/PM 14.01
Depressuring	R&R 137
Derailed	R&R 151
Diethanolamine (DEA)	PM 3.12
Draining and Venting	R&R 137
Dropout Systems	R&R 114/PM 15.02
Drum Disposal	R&R 109/PM 3.15
Drum Handling (Audiscan)	
Drum or Barrel Tags	R&R 47
Dust Respirators	R&R 79

E.

Ear Protection	R&R 70
Electric Lights	R&R 110
Electric Substations	PM 3.05
Electric System	R&R 42/PM 3.10, 3.11
Electrical Work	R&R 109/PM 13.04
Electricians' Gloves	R&R 68
Elevated Work	R&R 167
Employee's Responsibility	R&R 25
Entering Vessels	PM 13.05
Environmental Control	EM 5.0
Excavating	R&R 113
Eye Protection	R&R 70

F.

Face Shields	R&R 70
Fire and Safety Permits (Audiscan)	R&R 52
Fire Control	EM 2.0
Fire Protection (Audiscan)	R&R 31
First Aid Procedures	R&R 29/EM 1.0
Flame	R&R 99
Flammable Materials (Lab)	R&R 126
Flare Systems	R&R 114/PM 4.02, 15.02
Foot Protection	R&R 81
Fork Trucks (Audiscan)	R&R 135
Fresh Air Masks	R&R 76/PM 13.01
Furnace Lighting	R&R 63/PM 13.00
Furnaces	R&R 117

G.

Gas Cylinders	R&R 102
Gas Freeing Tanks	R&R 154
Gases and Vapors	R&R 83
Gasoline Spills	R&R 99
Gloves (Audiscan)	R&R 68
Goggles	R&R 41, 71
Grit Blasting	R&R 113, 143
Grounding Cables	R&R 112
Gunniting	R&R 113

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H.

Hand Tools (Audiscan)	R&R 162
Hard Hats (Audiscan)	R&R 75
Hazardous Waste	R&R 107/PM 3.03
Head Protection (Audiscan)	R&R 75
Hearing Protection	R&R 70/PM 13.03
Helmets and Hoods	R&R 74
Hot Tapping Permits	PM 4.09
Housekeeping	R&R 27
Hydrocarbon Sulfide (H ₂ S) (Audiscan)	R&R 88
Hydrocarbon Vapors	R&R 86
Hydrochloric Acid	R&R 92
Hydrogen Attack and Embrittlement	PM 5.00

I.

Inert Gas Blanketed Systems	PM 15.03
Injury Procedures	R&R 28
Instrument Air Connections	R&R 45
Instrument Valve Tags	R&R 47
Instrument Work	R&R 120
Iron Sulfide Hazards	R&R 95

J.

Jewelry (Rings)	R&R 66
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K.

L.

Laboratory Glassware	R&R 127
Laboratory Safety	R&R 121
Ladder Safety (Audiscan)	R&R 128, 169
Lasers	PM 13.02
Lead (TEL)	R&R 94
Leaded Gasoline Tanks	R&R 158
Life Belts	R&R 68
Life Jackets	R&R 81
Lift Trucks (Audiscan)	R&R 135
Lifting Equipment	R&R 130
Lighting Flares (Elevated)	PM 4.02
Lighting Furnaces	R&R 63, 117
Loading Racks	R&R 113/PM 4.04
Lockout Procedures (Audiscan)	R&R 43/PM 13.04
Lost Time Injuries	PM 13.11
Lubrication Program	PM 5.01

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M.

Maintenance in Operating Areas	R&R 48
Malfunction Reports	PM 12.04
Material Handling and Storage	R&R 130
Meters	R&R 120
Motor Shutdowns	R&R 138
MSDS (Audiscan)	

N.

Nitrogen Gas (N ₂)	R&R 88/PM 3.00, 15.03
Nitrogen System	R&R 43
Nitrogen System Tags	R&R 47
Noise Contour Maps	PM 13.03
Nurse Case Investigation	PM 13.11

O.

Opening and Blinding Lines (Audiscan)	R&R 141/PM 13.06
Opening Machinery	R&R 137
Oxygen Cylinders	R&R 103

P.

Painting and Sandblasting	R&R 143
PCB's - EPA Regulations	PM 11.03
Pedestrians	R&R 35
Permit System (Audiscan)	R&R 49
Petroleum Vapors	R&R 86
Phenol	R&R 93
Photography	R&R 19/PM 6.03
Pipe Line Emergencies	EM 7.0
Pipe Racks	PM 2.00
Pipe Work	R&R 144
Pitch System	PM 3.08
Poison Control Centers	EM 7.0
Power Tools (Audiscan)	R&R 163
Pressure Relief System Tags	R&R 47
Pressure Relief Valve Installations	PM 5.02
Pressure Relief Valve Maintenance	PM 4.00, 4.03
Pressure/Vacuum Vents - Tanks	PM 15.01
Propane Cylinders	R&R 103
Pump and Compressor Shutdowns	R&R 139
Pyrophoric Iron	R&R 95

Q.

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R.

Radiation Emergencies	PM 13.02
Radioactive Material	R&R 147/PM 13.02
Railroad Equipment	R&R 148
Red Flags	R&R 98
Refinery Fuel Pitch System	PM 3.08
Relief Valve Discharges	PM 15.00
Respirators	R&R 79
Respiratory Equipment	R&R 75/PM 13.01
Rigging Equipment	R&R 131
Rubber Clothing	R&R 67

S.

Safety Audits	PM 13.08
Safety Belts	R&R 68, 167
Safety Clothing	R&R 66
Safety Equipment	R&R 64
Safety Facilities	R&R 64
Safety Glasses	R&R 74
Safety Incident Investigation	PM 13.11
Safety Permits	R&R 52/PM 14.01
Sampling - Tanks	R&R 161
Sandblasting	R&R 113, 143
Scaffolding	R&R 152
Scooters (Audiscan)	R&R 39
Seat Boards	R&R 167
Self-Contained Air Masks	R&R 76/PM 13.01
Sewer Precautions	PM 4.08
Shutdown Blinding	PM 13.06
Smoking Rules	R&R 19, 32/PM 14.00
Sour Water Handling	PM 12.00
Speed Limits	R&R 36
Spills - General	R&R 170/PM 11.00, 11.06/EM 5.0
Spills - Mercaptan Oils	PM 11.01
Spills - Phenols	PM 11.02
Start Up of New Equipment	PM 1.00
Static Electricity	R&R 111/PM 4.04
Steam System	R&R 42
Storage Tanks	R&R 154
Substations	PM 3.05
Sulfur Dioxide (SO ₂)	R&R 89
Sulfuric Acid (H ₂ SO ₄)	R&R 89
Supervisor's Responsibility	R&R 24

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T.		
	Tags - Danger and Caution	R&R 43, 46
	Tags - Pressure Relief Systems	R&R 47
	Tags - Shutdown Blinds	PM 13.06
	Tank Cleaning	R&R 154
	Tank Gauging and Sampling	R&R 161
	Tank Roofs	R&R 168
	Telephone Outages	PM 13.10
	Tetraethyl Head (TEL)	R&R 94
	Tool Safety	R&R 162
	Torches	R&R 102
	Toxic Material Handling (Lab)	R&R 124
	Traffic Regulations	R&R 35
	Trains	R&R 148
	Turbine Shutdowns	R&R 138
U.		
	Underground Lines	R&R 120
	Utilities	R&R 40
V.		
	Vessel and Exchanger Opening	R&R 139
W.		
	Warehousing	R&R 136
	Waste Disposal	R&R 99, 107/PM 3.03
	Water Systems - Boiler Water	PM 3.04
	Water Systems - Cooling Water	PM 3.02
	Water Systems - Domestic Water	R&R 40
	Welders' Gloves	R&R 68
	Welding Hood	R&R 74
	Welding Machine	R&R 99
	Welding on Equipment in Service	PM 4.09
	Welding Safety	R&R 99
	Winches	R&R 98
	Woodworking Equipment	R&R 170
X.		
Y.		
Z.		

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