DEPARTMENT OF THE NAVY
NAVAL SURFACE WARFARE CENTER
CARDEROCK DIVISION

NAVAL SHIP SYSTEMS
ENGINEERING STATION
PHILADELPHIA, PA 19112-5083

IN REPLY REFER TO
9503
Ser 9234/110

From: Commander, Cardercock Division, Naval Surface Warfare Center, Philadelphia, PA 19112-5083
To: Commander, Naval Sea Systems Command (Code 05L3)

Subj: FLEXIBLE RUBBER HOSE CHANGE TO PERIODIC MAINTENANCE

Ref: (a) COMNAVSEASYSCOM LTR Serial 03134/443 of 19 Dec 1997
(b) NAVSEA S6430-AE-TED-010-Technical Directive for Piping Devices and Flex Hose Assemblies
(c) TELCON btwn CNSL Port Engineer (Mr. Joe Marques)/NSWCCD-SSES Code 9234 (AL Pappalardo) of 05/12/03.

Encl: (1) Existing and Newly proposed periodicity Flex Hose Spreadsheet for a Typical DDG-51 Class Ship

1. Reference (a), ACN 3A (NSDSA Control Number A48048) was issued to modify the criteria concerning criticality and replacement requirements for flexible rubber hose. The results was an extension of hose life to twelve years for critical applications, reference (b), and the cancellatoin of periodic maintenance for Condition Based Maintenance (CBM) hoses unless the assembly fails visual inspection or while in service.

2. All hose lists will be forwarded to Carderock Division, Naval Surface Warfare Center (NSWCCD-SSES) Code 9234 for review (reference (a)). A final list of critical flex hose assemblies will be developed by Code 9234 prior to forwarding to Naval Sea Systems Command (NAVSEA) Code 05 for approval.

3. NSWCCD-SSES Code 9234 was taked to review the existing critical hose list (CHL) from the Flex Manangement Program installed on DDG-51 platforms (reference (c)), and to determine if the CHL could be updated in an effort to reduce costs while maintaining current safety standards. Enclosure (1) provides a list of existing critical hose assemblies and recommended changes (new periodicity) for use on all DDG-51 Class Ships. Upon approval all applicable Programs will be updated and distributed to each ship.

4. NSWCCD-SSES points of contact are A. Pappalardo/D. Luciani, Code 9234, Commercial (215) 897-7242/7875 or DSN 443-7242/7875.

T.A. PERRY
By direction

Copy to:
NAVSEAS (Code 03N)
CONAVSURFLANT Norfolk, VA (N434A11, N431A3)
COMREGSUPPGRU Mayport, FL (N4)

Revised DDG-51 Critical Flex Hose List

EQUIPMENT DESCRIPTION	SYSTEM	OLD DESIGNATION	NEW DESIGNATION	TYPE
A/C #1 CHILLED WATER INLET	A/C	Critical	Non-Critical	SYNTHETIC RUBBER
A/C #1 CHILLED WATER OUTLET	A/C	Critical	Non-Critical	SYNTHETIC RUBBER
A/C #1 CHILLED WATER PUMP DISCHARGE	A/C	Critical	Non-Critical	SYNTHETIC RUBBER
A/C #1 CHILLED WATER PUMP SUCTION	A/C	Critical	Non-Critical	SYNTHETIC RUBBER
A/C #1 OIL COOLER INLET	A/C	Critical	Non-Critical	SYNTHETIC RUBBER
A/C #1 OIL COOLER OUTLET	A/C	Critical	Non-Critical	SYNTHETIC RUBBER
A/C #1 PURGE INLET	A/C	Critical	Non-Critical	SYNTHETIC RUBBER
A/C #1 PURGE OUTLET	A/C	Critical	Non-Critical	SYNTHETIC RUBBER
A/C #1 S/W INLET	A/C	Critical	Non-Critical	SYNTHETIC RUBBER
A/C #1 S/W OUTLET	A/C	Critical	Non-Critical	SYNTHETIC RUBBER
A/C #2 CHILLED WATER INLET	A/C	Critical	Non-Critical	SYNTHETIC RUBBER
A/C #2 CHILLED WATER OUTLET	A/C	Critical	Non-Critical	SYNTHETIC RUBBER
A/C #2 CHILLED WATER PUMP DISCHARGE	A/C	Critical	Non-Critical	SYNTHETIC RUBBER
A/C #2 CHILLED WATER PUMP SUCTION	A/C	Critical	Non-Critical	SYNTHETIC RUBBER
A/C #2 OIL COOLER INLET	A/C	Critical	Non-Critical	SYNTHETIC RUBBER
A/C #2 OIL COOLER OUTLET	A/C	Critical	Non-Critical	SYNTHETIC RUBBER

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EQUIPMENT DESCRIPTION	SYSTEM	OLD DESIGNATION	NEW DESIGNATION	TYPE
A/C #2 S/W INLET	A/C	**Critical**	**Non-Critical**	SYNTHETIC RUBBER
A/C #2 S/W OUTLET	A/C	**Critical**	**Non-Critical**	SYNTHETIC RUBBER
A/C #3 CHILLED WATER INLET	A/C	**Critical**	**Non-Critical**	SYNTHETIC RUBBER
A/C #3 CHILLED WATER OUTLET	A/C	**Critical**	**Non-Critical**	SYNTHETIC RUBBER
A/C #3 CHILLED WATER PUMP DISCHARGE	A/C	**Critical**	**Non-Critical**	SYNTHETIC RUBBER
A/C #3 CHILLED WATER PUMP SUCTION	A/C	**Critical**	**Non-Critical**	SYNTHETIC RUBBER
A/C #3 OIL COOLER INLET	A/C	**Critical**	**Non-Critical**	SYNTHETIC RUBBER
A/C #3 OIL COOLER OUTLET	A/C	**Critical**	**Non-Critical**	SYNTHETIC RUBBER
A/C #3 PURGE INLET	A/C	**Critical**	**Non-Critical**	SYNTHETIC RUBBER
A/C #3 PURGE OUTLET	A/C	**Critical**	**Non-Critical**	SYNTHETIC RUBBER
A/C #3 S/W INLET	A/C	**Critical**	**Non-Critical**	SYNTHETIC RUBBER
A/C #3 S/W OUTLET	A/C	**Critical**	**Non-Critical**	SYNTHETIC RUBBER
A/C #4 CHILLED WATER INLET	A/C	**Critical**	**Non-Critical**	SYNTHETIC RUBBER
A/C #4 CHILLED WATER OUTLET	A/C	**Critical**	**Non-Critical**	SYNTHETIC RUBBER
A/C #4 CHILLED WATER PUMP DISCHARGE	A/C	**Critical**	**Non-Critical**	SYNTHETIC RUBBER
A/C #4 CHILLED WATER PUMP SUCTION	A/C	**Critical**	**Non-Critical**	SYNTHETIC RUBBER

Revised DDG-51 Critical Flex Hose List

EQUIPMENT DESCRIPTION	SYSTEM	OLD DESIGNATION	NEW DESIGNATION	TYPE
A/C #4 OIL COOLER INLET	A/C	Critical	Non-Critical	SYNTHETIC RUBBER
A/C #4 OIL COOLER OUTLET	A/C	Critical	Non-Critical	SYNTHETIC RUBBER
A/C #4 PURGE INLET	A/C	Critical	Non-Critical	SYNTHETIC RUBBER
A/C #4 PURGE OUTLET	A/C	Critical	Non-Critical	SYNTHETIC RUBBER
A/C #4 S/W INLET	A/C	Critical	Non-Critical	SYNTHETIC RUBBER
A/C #4 S/W OUTLET	A/C	Critical	Non-Critical	SYNTHETIC RUBBER
PORT L/P AIR TO PNEUMATIC ACTUATOR	ANCHOR WINDLASS	Critical	Non-Critical	SYNTHETIC RUBBER
PORT L/P AIR TO PNEUMATIC ACTUATOR	ANCHOR WINDLASS	Critical	Non-Critical	SYNTHETIC RUBBER
STBD L/P AIR TO PNEUMATIC ACTUATOR	ANCHOR WINDLASS	Critical	Non-Critical	SYNTHETIC RUBBER
STBD L/P AIR TO PNEUMATIC ACTUATOR	ANCHOR WINDLASS	Critical	Non-Critical	SYNTHETIC RUBBER
HD-1157 COOLER CHILLED WATER RETURN PORT HEX	C&D	Critical	Non-Critical	SYNTHETIC RUBBER
HD-1157 COOLER CHILLED WATER RETURN STBD HEX	C&D	Critical	Non-Critical	SYNTHETIC RUBBER
HD-1157 COOLER CHILLED WATER SUPPLY PORT HEX	C&D	Critical	Non-Critical	SYNTHETIC RUBBER
HD-1157 COOLER CHILLED WATER SUPPLY STBD HEX	C&D	Critical	Non-Critical	SYNTHETIC RUBBER
MT21 S/W RETURN	CIWS	Critical	Non-Critical	SYNTHETIC RUBBER
MT21 S/W SUPPLY	CIWS	Critical	Non-Critical	SYNTHETIC RUBBER

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EQUIPMENT DESCRIPTION	SYSTEM	OLD DESIGNATION	NEW DESIGNATION	TYPE
MT22 S/W RETURN	CIWS	Critical	Non-Critical	SYNTHETIC RUBBER
MT22 S/W SUPPLY	CIWS	Critical	Non-Critical	SYNTHETIC RUBBER
AFT O.D. BOX DRAIN	CRP	Critical	Critical	SYNTHETIC RUBBER
AFT O.D. BOX DRAIN	CRP	Critical	Critical	SYNTHETIC RUBBER
ATTACHED PUMP DISCHARGE	CRP	Critical	Critical	SYNTHETIC RUBBER
ATTACHED PUMP DISCHARGE	CRP	Critical	Critical	SYNTHETIC RUBBER
ATTACHED PUMP SUCTION	CRP	Critical	Critical	SYNTHETIC RUBBER
ATTACHED PUMP SUCTION	CRP	Critical	Critical	SYNTHETIC RUBBER
CONTROL OIL AHEAD	CRP	Critical	Critical	SYNTHETIC RUBBER
CONTROL OIL AHEAD	CRP	Critical	Critical	SYNTHETIC RUBBER
CONTROL OIL ASTERN	CRP	Critical	Critical	SYNTHETIC RUBBER
CONTROL OIL ASTERN	CRP	Critical	Critical	SYNTHETIC RUBBER
EMERGENCY HAND PUMP	CRP	Critical	Critical	SYNTHETIC RUBBER
EMERGENCY HAND PUMP	CRP	Critical	Critical	SYNTHETIC RUBBER
EMERGENCY HAND PUMP	CRP	Critical	Critical	SYNTHETIC RUBBER
EMERGENCY HAND PUMP	CRP	Critical	Critical	SYNTHETIC RUBBER

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EQUIPMENT DESCRIPTION	SYSTEM	OLD DESIGNATION	NEW DESIGNATION	TYPE
EMERGENCY HAND PUMP	CRP	Critical	Critical	SYNTHETIC RUBBER
EMERGENCY HAND PUMP	CRP	Critical	Critical	SYNTHETIC RUBBER
FORWARD O.D. BOX DRAIN	CRP	Critical	Critical	SYNTHETIC RUBBER
FORWARD O.D. BOX DRAIN	CRP	Critical	Critical	SYNTHETIC RUBBER
HEAD TANK SUPPLY TO/FROM O.D. BOX	CRP	Critical	Critical	SYNTHETIC RUBBER
HEAD TANK SUPPLY TO/FROM O.D. BOX	CRP	Critical	Critical	SYNTHETIC RUBBER
MOTOR DRIVEN PUMP DISCHARGE	CRP	Critical	Critical	SYNTHETIC RUBBER
MOTOR DRIVEN PUMP DISCHARGE	CRP	Critical	Critical	SYNTHETIC RUBBER
MOTOR DRIVEN PUMP SUCTION	CRP	Critical	Critical	SYNTHETIC RUBBER
MOTOR DRIVEN PUMP SUCTION	CRP	Critical	Critical	SYNTHETIC RUBBER
O.D. BOX TOP DRAIN	CRP	Critical	Critical	SYNTHETIC RUBBER
O.D. BOX TOP DRAIN	CRP	Critical	Critical	SYNTHETIC RUBBER
POWER OIL SUPPLY TO O.D. BOX	CRP	Critical	Critical	SYNTHETIC RUBBER
PRAIRIE AIR SUPPLY TO O.D. BOX	CRP	Critical	Non-Critical	SYNTHETIC RUBBER
PRAIRIE AIR SUPPLY TO O.D. BOX	CRP	Critical	Non-Critical	SYNTHETIC RUBBER
RETURN OIL	CRP	Critical	Critical	SYNTHETIC RUBBER

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EQUIPMENT DESCRIPTION	SYSTEM	OLD DESIGNATION	NEW DESIGNATION	TYPE
RETURN OIL	CRP	Critical	Critical	SYNTHETIC RUBBER
HD-1079/SLQ-32(V)3 N2/DRY AIR CHARGE	EWS	Critical	Non-Critical	SYNTHETIC RUBBER
F/O PURIFIER #1 F/O INLET	F/O	Critical	Critical	SYNTHETIC RUBBER
F/O PURIFIER #1 F/O OUTLET	F/O	Critical	Critical	SYNTHETIC RUBBER
F/O PURIFIER #1 L/P AIR	F/O	Critical	Non-Critical	SYNTHETIC RUBBER
F/O PURIFIER #2 F/O INLET	F/O	Critical	Critical	SYNTHETIC RUBBER
F/O PURIFIER #2 F/O OUTLET	F/O	Critical	Critical	SYNTHETIC RUBBER
F/O PURIFIER #2 L/P AIR	F/O	Critical	Non-Critical	SYNTHETIC RUBBER
F/O SERVICE PUMP #1A DISCHARGE	F/O	Critical	Critical	SYNTHETIC RUBBER
F/O SERVICE PUMP #1A SUCTION	F/O	Critical	Critical	SYNTHETIC RUBBER
F/O SERVICE PUMP #1B DISCHARGE	F/O	Critical	Critical	SYNTHETIC RUBBER
F/O SERVICE PUMP #1B SUCTION	F/O	Critical	Critical	SYNTHETIC RUBBER
F/O SERVICE PUMP #2A DISCHARGE	F/O	Critical	Critical	SYNTHETIC RUBBER
F/O SERVICE PUMP #2A SUCTION	F/O	Critical	Critical	SYNTHETIC RUBBER
F/O SERVICE PUMP #2B DISCHARGE	F/O	Critical	Critical	SYNTHETIC RUBBER
F/O SERVICE PUMP #2B SUCTION	F/O	Critical	Critical	SYNTHETIC RUBBER

EQUIPMENT DESCRIPTION	SYSTEM	OLD DESIGNATION	NEW DESIGNATION	TYPE
F/O XFER PUMP #1 DISCHARGE	F/O	Critical	Critical	SYNTHETIC RUBBER
F/O XFER PUMP #1 SUCTION	F/O	Critical	Critical	SYNTHETIC RUBBER
F/O XFER PUMP #2 DISCHARGE	F/O	Critical	Critical	SYNTHETIC RUBBER
F/O XFER PUMP #2 SUCTION	F/O	Critical	Critical	SYNTHETIC RUBBER
MAGAZINE SPRINKLER AFT VLS B SIZE	FIRE FIGHTING	Critical	Critical	SYNTHETIC RUBBER
MAGAZINE SPRINKLER AFT VLS B SIZE	FIRE FIGHTING	Critical	Critical	SYNTHETIC RUBBER
MAGAZINE SPRINKLER FWD VLS A SIZE	FIRE FIGHTING	Critical	Critical	SYNTHETIC RUBBER
MAGAZINE SPRINKLER FWD VLS A SIZE	FIRE FIGHTING	Critical	Critical	SYNTHETIC RUBBER
MAGAZINE SPRINKLER GROUP AMMO STAGING	FIRE FIGHTING	Critical	Critical	SYNTHETIC RUBBER
MAGAZINE SPRINKLER GROUP AMMO STAGING	FIRE FIGHTING	Critical	Critical	SYNTHETIC RUBBER
MAGAZINE SPRINKLER GROUP FWD PROJ MAGAZINE	FIRE FIGHTING	Critical	Critical	SYNTHETIC RUBBER
MAGAZINE SPRINKLER GROUP FWD PROJ MAGAZINE	FIRE FIGHTING	Critical	Critical	SYNTHETIC RUBBER
MAGAZINE SPRINKLER GROUP ROCKET MAG #2	FIRE FIGHTING	Critical	Critical	SYNTHETIC RUBBER
MAGAZINE SPRINKLER GROUP ROCKET MAG #2	FIRE FIGHTING	Critical	Critical	SYNTHETIC RUBBER
MAGAZINE SPRINKLER GROUP SM MAG/PYRO MAG #1	FIRE FIGHTING	Critical	Critical	SYNTHETIC RUBBER
MAGAZINE SPRINKLER GROUP SM MAG/PYRO MAG #1	FIRE FIGHTING	Critical	Critical	SYNTHETIC RUBBER

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EQUIPMENT DESCRIPTION	SYSTEM	OLD DESIGNATION	NEW DESIGNATION	TYPE
MAGAZINE SPRINKLER SUPPLY MODULE 1	FIRE FIGHTING	Critical	Critical	SYNTHETIC RUBBER
MAGAZINE SPRINKLER SUPPLY MODULE 1	FIRE FIGHTING	Critical	Critical	SYNTHETIC RUBBER
MAGAZINE SPRINKLER SUPPLY MODULE 2	FIRE FIGHTING	Critical	Critical	SYNTHETIC RUBBER
MAGAZINE SPRINKLER SUPPLY MODULE 3	FIRE FIGHTING	Critical	Critical	SYNTHETIC RUBBER
MAGAZINE SPRINKLER SUPPLY MODULE 4	FIRE FIGHTING	Critical	Critical	SYNTHETIC RUBBER
MAGAZINE SPRINKLER SUPPLY MODULE 5	FIRE FIGHTING	Critical	Critical	SYNTHETIC RUBBER
MAGAZINE SPRINKLER SUPPLY MODULE 5	FIRE FIGHTING	Critical	Critical	SYNTHETIC RUBBER
MAGAZINE SPRINKLER SUPPLY MODULE 5	FIRE FIGHTING	Critical	Critical	SYNTHETIC RUBBER
MAGAZINE SPRINKLER SUPPLY MODULE 5	FIRE FIGHTING	Critical	Critical	SYNTHETIC RUBBER
MAGAZINE SPRINKLER SUPPLY MODULE 6	FIRE FIGHTING	Critical	Critical	SYNTHETIC RUBBER
MAGAZINE SPRINKLER SUPPLY MODULE 6	FIRE FIGHTING	Critical	Critical	SYNTHETIC RUBBER
MAGAZINE SPRINKLER SUPPLY MODULE 7	FIRE FIGHTING	Critical	Critical	SYNTHETIC RUBBER
MAGAZINE SPRINKLER SUPPLY MODULE 7	FIRE FIGHTING	Critical	Critical	SYNTHETIC RUBBER
MAGAZINE SPRINKLER SUPPLY MODULE 8	FIRE FIGHTING	Critical	Critical	SYNTHETIC RUBBER
MAGAZINE SPRINKLER SUPPLY MODULE 8	FIRE FIGHTING	Critical	Critical	SYNTHETIC RUBBER
MAGAZINE SPRINKLER SUPPLY MODULE 8	FIRE FIGHTING	Critical	Critical	SYNTHETIC RUBBER

EQUIPMENT DESCRIPTION	SYSTEM	OLD DESIGNATION	NEW DESIGNATION	TYPE
MAGAZINE SPRINKLER TORPEDO MAGAZINE	FIRE FIGHTING	Critical	Critical	SYNTHETIC RUBBER
MAGAZINE SPRINKLER TORPEDO MAGAZINE	FIRE FIGHTING	Critical	Critical	SYNTHETIC RUBBER
FIRE PUMP #1 DISCHARGE	FIREMAIN	Critical	Non-Critical	SYNTHETIC RUBBER
FIRE PUMP #1 SUCTION	FIREMAIN	Critical	Non-Critical	SYNTHETIC RUBBER
FIRE PUMP #2 DISCHARGE	FIREMAIN	Critical	Non-Critical	SYNTHETIC RUBBER
FIRE PUMP #2 SUCTION	FIREMAIN	Critical	Non-Critical	SYNTHETIC RUBBER
FIRE PUMP #3 DISCHARGE	FIREMAIN	Critical	Non-Critical	SYNTHETIC RUBBER
FIRE PUMP #3 SUCTION	FIREMAIN	Critical	Non-Critical	SYNTHETIC RUBBER
FIRE PUMP #4 DISCHARGE	FIREMAIN	Critical	Non-Critical	SYNTHETIC RUBBER
FIRE PUMP #4 SUCTION	FIREMAIN	Critical	Non-Critical	SYNTHETIC RUBBER
FIRE PUMP #5 DISCHARGE	FIREMAIN	Critical	Non-Critical	SYNTHETIC RUBBER
FIRE PUMP #5 SUCTION	FIREMAIN	Critical	Non-Critical	SYNTHETIC RUBBER
FIRE PUMP #6 DISCHARGE	FIREMAIN	Critical	Non-Critical	SYNTHETIC RUBBER
H/P AIR COMPRESSOR #1 OUTLET	H/P AIR	Critical	Critical	SYNTHETIC RUBBER
H/P AIR COMPRESSOR #1 PRESSURE SWITCH CUT IN	H/P AIR	Critical	Critical	SYNTHETIC RUBBER
H/P AIR COMPRESSOR #1 PRESSURE SWITCH CUT OUT	H/P AIR	Critical	Critical	SYNTHETIC RUBBER

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EQUIPMENT DESCRIPTION	SYSTEM	OLD DESIGNATION	NEW DESIGNATION	TYPE
H/P AIR COMPRESSOR #2 OUTLET	H/P AIR	Critical	Critical	SYNTHETIC RUBBER
H/P AIR COMPRESSOR #2 PRESSURE SWITCH CUT IN	H/P AIR	Critical	Critical	SYNTHETIC RUBBER
H/P AIR COMPRESSOR #2 PRESSURE SWITCH CUT OUT	H/P AIR	Critical	Critical	SYNTHETIC RUBBER
1A BLOW-IN DOOR	INTAKE AIR	Critical	Non-Critical	SYNTHETIC RUBBER
1A BLOW-IN DOOR	INTAKE AIR	Critical	Non-Critical	SYNTHETIC RUBBER
1A BLOW-IN DOOR	INTAKE AIR	Critical	Non-Critical	SYNTHETIC RUBBER
1A BLOW-IN DOOR	INTAKE AIR	Critical	Non-Critical	SYNTHETIC RUBBER
1A BLOW-IN DOOR	INTAKE AIR	Critical	Non-Critical	SYNTHETIC RUBBER
1A BLOW-IN DOOR	INTAKE AIR	Critical	Non-Critical	SYNTHETIC RUBBER
1A BLOW-IN DOOR	INTAKE AIR	Critical	Non-Critical	SYNTHETIC RUBBER
1A BLOW-IN DOOR	INTAKE AIR	Critical	Non-Critical	SYNTHETIC RUBBER
1B BLOW-IN DOOR	INTAKE AIR	Critical	Non-Critical	SYNTHETIC RUBBER
1B BLOW-IN DOOR	INTAKE AIR	Critical	Non-Critical	SYNTHETIC RUBBER
1B BLOW-IN DOOR	INTAKE AIR	Critical	Non-Critical	SYNTHETIC RUBBER
1B BLOW-IN DOOR	INTAKE AIR	Critical	Non-Critical	SYNTHETIC RUBBER
1B BLOW-IN DOOR	INTAKE AIR	Critical	Non-Critical	SYNTHETIC RUBBER

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EQUIPMENT DESCRIPTION	SYSTEM	OLD DESIGNATION	NEW DESIGNATION	TYPE
1B BLOW-IN DOOR	INTAKE AIR	Critical	Non-Critical	SYNTHETIC RUBBER
1B BLOW-IN DOOR	INTAKE AIR	Critical	Non-Critical	SYNTHETIC RUBBER
1B BLOW-IN DOOR	INTAKE AIR	Critical	Non-Critical	SYNTHETIC RUBBER
2A BLOW-IN DOOR	INTAKE AIR	Critical	Non-Critical	SYNTHETIC RUBBER
2A BLOW-IN DOOR	INTAKE AIR	Critical	Non-Critical	SYNTHETIC RUBBER
2A BLOW-IN DOOR	INTAKE AIR	Critical	Non-Critical	SYNTHETIC RUBBER
2A BLOW-IN DOOR	INTAKE AIR	Critical	Non-Critical	SYNTHETIC RUBBER
2A BLOW-IN DOOR	INTAKE AIR	Critical	Non-Critical	SYNTHETIC RUBBER
2A BLOW-IN DOOR	INTAKE AIR	Critical	Non-Critical	SYNTHETIC RUBBER
2A BLOW-IN DOOR	INTAKE AIR	Critical	Non-Critical	SYNTHETIC RUBBER
2A BLOW-IN DOOR	INTAKE AIR	Critical	Non-Critical	SYNTHETIC RUBBER
2B BLOW-IN DOOR	INTAKE AIR	Critical	Non-Critical	SYNTHETIC RUBBER
2B BLOW-IN DOOR	INTAKE AIR	Critical	Non-Critical	SYNTHETIC RUBBER
2B BLOW-IN DOOR	INTAKE AIR	Critical	Non-Critical	SYNTHETIC RUBBER
2B BLOW-IN DOOR	INTAKE AIR	Critical	Non-Critical	SYNTHETIC RUBBER
2B BLOW-IN DOOR	INTAKE AIR	Critical	Non-Critical	SYNTHETIC RUBBER

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EQUIPMENT DESCRIPTION	SYSTEM	OLD DESIGNATION	NEW DESIGNATION	TYPE
2B BLOW-IN DOOR	INTAKE AIR	Critical	Non-Critical	SYNTHETIC RUBBER
2B BLOW-IN DOOR	INTAKE AIR	Critical	Non-Critical	SYNTHETIC RUBBER
2B BLOW-IN DOOR	INTAKE AIR	Critical	Non-Critical	SYNTHETIC RUBBER
SSGTG #1 BLOW-IN DOOR	INTAKE AIR	Critical	Non-Critical	SYNTHETIC RUBBER
SSGTG #1 BLOW-IN DOOR	INTAKE AIR	Critical	Non-Critical	SYNTHETIC RUBBER
SSGTG #2 BLOW-IN DOOR	INTAKE AIR	Critical	Non-Critical	SYNTHETIC RUBBER
SSGTG #2 BLOW-IN DOOR	INTAKE AIR	Critical	Non-Critical	SYNTHETIC RUBBER
SSGTG #3 BLOW-IN DOOR	INTAKE AIR	Critical	Non-Critical	SYNTHETIC RUBBER
SSGTG #3 BLOW-IN DOOR	INTAKE AIR	Critical	Non-Critical	SYNTHETIC RUBBER
ATTACHED L/O PUMP DISCHARGE	L/O	Critical	Critical	SYNTHETIC RUBBER
ATTACHED L/O PUMP DISCHARGE	L/O	Critical	Critical	SYNTHETIC RUBBER
ATTACHED L/O PUMP PRIME LINE	L/O	Critical	Critical	SYNTHETIC RUBBER
ATTACHED L/O PUMP PRIME LINE	L/O	Critical	Critical	SYNTHETIC RUBBER
ATTACHED L/O PUMP SUCTION	L/O	Critical	Critical	SYNTHETIC RUBBER
ATTACHED L/O PUMP SUCTION	L/O	Critical	Critical	SYNTHETIC RUBBER
L/O PURIFIER #1 INLET FROM HEATER	L/O	Critical	Critical	SYNTHETIC RUBBER

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EQUIPMENT DESCRIPTION	SYSTEM	OLD DESIGNATION	NEW DESIGNATION	TYPE
L/O PURIFIER #1 INLET TO PURIFIER	L/O	**Critical**	**Critical**	SYNTHETIC RUBBER
L/O PURIFIER #1 L/O FEED BY-PASS	L/O	**Critical**	**Critical**	SYNTHETIC RUBBER
L/O PURIFIER #1 L/O OUTLET	L/O	**Critical**	**Critical**	SYNTHETIC RUBBER
L/O PURIFIER #1 L/P AIR	L/O	**Critical**	**Non-Critical**	SYNTHETIC RUBBER
L/O PURIFIER #1 OUTLET TO HEATER	L/O	**Critical**	**Critical**	SYNTHETIC RUBBER
L/O PURIFIER #1 XFER PUMP OUTLET	L/O	**Critical**	**Critical**	SYNTHETIC RUBBER
L/O PURIFIER #2 INLET FROM HEATER	L/O	**Critical**	**Critical**	SYNTHETIC RUBBER
L/O PURIFIER #2 INLET TO PURIFIER	L/O	**Critical**	**Critical**	SYNTHETIC RUBBER
L/O PURIFIER #2 L/O FEED BY-PASS	L/O	**Critical**	**Critical**	SYNTHETIC RUBBER
L/O PURIFIER #2 L/O OUTLET	L/O	**Critical**	**Critical**	SYNTHETIC RUBBER
L/O PURIFIER #2 L/P AIR	L/O	**Critical**	**Non-Critical**	SYNTHETIC RUBBER
L/O PURIFIER #2 OUTLET TO HEATER	L/O	**Critical**	**Critical**	SYNTHETIC RUBBER
L/O PURIFIER #2 XFER PUMP OUTLET	L/O	**Critical**	**Critical**	SYNTHETIC RUBBER
L/O SERVICE PUMP #1A DISCHARGE	L/O	**Critical**	**Critical**	SYNTHETIC RUBBER
L/O SERVICE PUMP #1A PRIME LINE	L/O	**Critical**	**Critical**	SYNTHETIC RUBBER
L/O SERVICE PUMP #1A SEAL LUBE OIL PRIME LINE	L/O	**Critical**	**Critical**	SYNTHETIC RUBBER

EQUIPMENT DESCRIPTION	SYSTEM	OLD DESIGNATION	NEW DESIGNATION	TYPE
L/O SERVICE PUMP #1A SEAL VENT	L/O	Critical	Critical	SYNTHETIC RUBBER
L/O SERVICE PUMP #1A SUCTION	L/O	Critical	Critical	SYNTHETIC RUBBER
L/O SERVICE PUMP #1B DISCHARGE	L/O	Critical	Critical	SYNTHETIC RUBBER
L/O SERVICE PUMP #1B PRIME LINE	L/O	Critical	Critical	SYNTHETIC RUBBER
L/O SERVICE PUMP #1B SEAL LUBE OIL PRIME LINE	L/O	Critical	Critical	SYNTHETIC RUBBER
L/O SERVICE PUMP #1B SEAL VENT	L/O	Critical	Critical	SYNTHETIC RUBBER
L/O SERVICE PUMP #1B SUCTION	L/O	Critical	Critical	SYNTHETIC RUBBER
L/O SERVICE PUMP #2A DISCHARGE	L/O	Critical	Critical	SYNTHETIC RUBBER
L/O SERVICE PUMP #2A PRIME LINE	L/O	Critical	Critical	SYNTHETIC RUBBER
L/O SERVICE PUMP #2A SEAL LUBE OIL PRIME LINE	L/O	Critical	Critical	SYNTHETIC RUBBER
L/O SERVICE PUMP #2A SEAL VENT	L/O	Critical	Critical	SYNTHETIC RUBBER
L/O SERVICE PUMP #2A SUCTION	L/O	Critical	Critical	SYNTHETIC RUBBER
L/O SERVICE PUMP #2B DISCHARGE	L/O	Critical	Critical	SYNTHETIC RUBBER
L/O SERVICE PUMP #2B PRIME LINE	L/O	Critical	Critical	SYNTHETIC RUBBER
L/O SERVICE PUMP #2B SEAL LUBE OIL PRIME LINE	L/O	Critical	Critical	SYNTHETIC RUBBER
L/O SERVICE PUMP #2B SEAL VENT	L/O	Critical	Critical	SYNTHETIC RUBBER

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EQUIPMENT DESCRIPTION	SYSTEM	OLD DESIGNATION	NEW DESIGNATION	TYPE
L/O SERVICE PUMP #2B SUCTION	L/O	Critical	Critical	SYNTHETIC RUBBER
L/O STRAINER LID HOSES	L/O	Critical	Non-Critical	SYNTHETIC RUBBER
L/O STRAINER LID HOSES	L/O	Critical	Non-Critical	SYNTHETIC RUBBER
L/O STRAINER LID HOSES	L/O	Critical	Non-Critical	SYNTHETIC RUBBER
L/O STRAINER LID HOSES	L/O	Critical	Non-Critical	SYNTHETIC RUBBER
LPAC #1 AIR OUTLET	L/P AIR	Critical	Non-Critical	SYNTHETIC RUBBER
LPAC #2 AIR OUTLET	L/P AIR	Critical	Non-Critical	SYNTHETIC RUBBER
LPAC #3 AIR OUTLET	L/P AIR	Critical	Non-Critical	SYNTHETIC RUBBER
WASHER #1 L/P AIR	LAUNDRY	Critical	Non-Critical	SYNTHETIC RUBBER
WASHER #2 L/P AIR	LAUNDRY	Critical	Non-Critical	SYNTHETIC RUBBER
GTM 1A F/O INLET	MAIN PROP	Critical	Critical	SYNTHETIC RUBBER
GTM 1A F/O MANIFOLD DRAIN	MAIN PROP	Critical	Critical	SYNTHETIC RUBBER
GTM 1A F/O SHROUD DRAIN	MAIN PROP	Critical	Critical	SYNTHETIC RUBBER
GTM 1A L/O SCAVENGE	MAIN PROP	Critical	Critical	SYNTHETIC RUBBER
GTM 1A L/O SUPPLY	MAIN PROP	Critical	Critical	SYNTHETIC RUBBER
GTM 1A L/P AIR (VENT DAMPER)	MAIN PROP	Critical	Non-Critical	SYNTHETIC RUBBER

EQUIPMENT DESCRIPTION	SYSTEM	OLD DESIGNATION	NEW DESIGNATION	TYPE
GTM 1B F/O INLET	MAIN PROP	Critical	Critical	SYNTHETIC RUBBER
GTM 1B F/O MANIFOLD DRAIN	MAIN PROP	Critical	Critical	SYNTHETIC RUBBER
GTM 1B F/O SHROUD DRAIN	MAIN PROP	Critical	Critical	SYNTHETIC RUBBER
GTM 1B L/O SCAVENGE	MAIN PROP	Critical	Critical	SYNTHETIC RUBBER
GTM 1B L/O SUPPLY	MAIN PROP	Critical	Critical	SYNTHETIC RUBBER
GTM 1B L/P AIR (VENT DAMPER)	MAIN PROP	Critical	Non-Critical	SYNTHETIC RUBBER
GTM 2A F/O INLET	MAIN PROP	Critical	Critical	SYNTHETIC RUBBER
GTM 2A F/O SHROUD DRAIN	MAIN PROP	Critical	Critical	SYNTHETIC RUBBER
GTM 2A L/O SCAVENGE	MAIN PROP	Critical	Critical	SYNTHETIC RUBBER
GTM 2A L/O SUPPLY	MAIN PROP	Critical	Critical	SYNTHETIC RUBBER
GTM 2B F/O INLET	MAIN PROP	Critical	Critical	SYNTHETIC RUBBER
GTM 2B F/O MANIFOLD DRAIN	MAIN PROP	Critical	Critical	SYNTHETIC RUBBER
GTM 2B F/O SHROUD DRAIN	MAIN PROP	Critical	Critical	SYNTHETIC RUBBER
GTM 2B L/O SCAVENGE	MAIN PROP	Critical	Critical	SYNTHETIC RUBBER
GTM 2B L/O SUPPLY	MAIN PROP	Critical	Critical	SYNTHETIC RUBBER
GTM 2B L/P AIR (VENT DAMPER)	MAIN PROP	Critical	Non-Critical	SYNTHETIC RUBBER

EQUIPMENT DESCRIPTION	SYSTEM	OLD DESIGNATION	NEW DESIGNATION	TYPE
GTM 2B WATER WASH INLET	MAIN PROP	Critical	Non-Critical	SYNTHETIC RUBBER
DEHUMIDIFIER INLET	MRG	Critical	Non-Critical	SYNTHETIC RUBBER
DEHUMIDIFIER INLET	MRG	Critical	Non-Critical	SYNTHETIC RUBBER
DEHUMIDIFIER OUTLET	MRG	Critical	Non-Critical	SYNTHETIC RUBBER
DEHUMIDIFIER OUTLET	MRG	Critical	Non-Critical	SYNTHETIC RUBBER
L/O INLET TO MRG	MRG	Critical	Critical	SYNTHETIC RUBBER
L/O INLET TO MRG	MRG	Critical	Critical	SYNTHETIC RUBBER
LUBE OIL INLET HEADER DRAIN	MRG	Critical	Critical	SYNTHETIC RUBBER
LUBE OIL INLET SENSING LINE	MRG	Critical	Critical	SYNTHETIC RUBBER
LUBE OIL INLET SENSING LINE	MRG	Critical	Critical	SYNTHETIC RUBBER
MOST REMOTE BEARING SENSING LINE	MRG	Critical	Critical	SYNTHETIC RUBBER
MOST REMOTE BEARING SENSING LINE	MRG	Critical	Critical	SYNTHETIC RUBBER
PRECIPITATOR INLET	MRG	Critical	Critical	SYNTHETIC RUBBER
PRECIPITATOR INLET	MRG	Critical	Critical	SYNTHETIC RUBBER
VITAL AIR TO MRG	MRG	Critical	Non-Critical	SYNTHETIC RUBBER
VITAL AIR TO MRG	MRG	Critical	Non-Critical	SYNTHETIC RUBBER

EQUIPMENT DESCRIPTION	SYSTEM	OLD DESIGNATION	NEW DESIGNATION	TYPE
OILY WASTE XFER PUMP #1 DISCHARGE	OILY WASTE	**Critical**	**Critical**	SYNTHETIC RUBBER
OILY WASTE XFER PUMP #1 SUCTION	OILY WASTE	**Critical**	**Critical**	SYNTHETIC RUBBER
OILY WASTE XFER PUMP #2 DISCHARGE	OILY WASTE	**Critical**	**Critical**	SYNTHETIC RUBBER
OILY WASTE XFER PUMP #2 SUCTION	OILY WASTE	**Critical**	**Critical**	SYNTHETIC RUBBER
PLASTIC PROCESSOR CONTROL UNIT L/P AIR	PWP	**Critical**	**Non-Critical**	SYNTHETIC RUBBER
PLASTIC PROCESSOR CONTROL UNIT L/P AIR	PWP	**Critical**	**Non-Critical**	SYNTHETIC RUBBER
PLASTIC PROCESSOR CONTROL UNIT L/P AIR	PWP	**Critical**	**Non-Critical**	SYNTHETIC RUBBER
HEAT EXCHANGER TO PORT Q WHPU	RAST	**Critical**	**Critical**	SYNTHETIC RUBBER
PORT A WHPU TO PORT TAILGUIDE WINCH	RAST	**Critical**	**Critical**	SYNTHETIC RUBBER
PORT B TAILGUIDE WINCH TO PORT B WHPU	RAST	**Critical**	**Critical**	SYNTHETIC RUBBER
PORT C TAILGUIDE WINCH TO PORT C WHPU	RAST	**Critical**	**Critical**	SYNTHETIC RUBBER
PORT D TAILGUIDE WINCH TO PORT D WHPU	RAST	**Critical**	**Critical**	SYNTHETIC RUBBER
PORT E TRAVERSE WINCH TO PORT E WHPU	RAST	**Critical**	**Critical**	SYNTHETIC RUBBER
PORT F TRAVERSE WINCH TO PORT F WHPU	RAST	**Critical**	**Critical**	SYNTHETIC RUBBER
PORT G WHPU TO PRESS PORT TRAVERSE	RAST	**Critical**	**Critical**	SYNTHETIC RUBBER
PORT N WHPU TO PRESS N TRANVERSE WINCH	RAST	**Critical**	**Critical**	SYNTHETIC RUBBER

EQUIPMENT DESCRIPTION	SYSTEM	OLD DESIGNATION	NEW DESIGNATION	TYPE
PORT P WHPU TO HEAT EXCHANGER	RAST	Critical	Critical	SYNTHETIC RUBBER
RAST TRACK DRAIN LINE	RAST	Critical	Critical	SYNTHETIC RUBBER
SUPPLY	RAST	Critical	Critical	SYNTHETIC RUBBER
TRAVERSE WINCH BRAKE (PORT)	RAST	Critical	Critical	SYNTHETIC RUBBER
TRAVERSE WINCH BRAKE (STBD)	RAST	Critical	Critical	SYNTHETIC RUBBER
TRAVERSE WINCH VALVE TO PORT L WHPU	RAST	Critical	Critical	SYNTHETIC RUBBER
TRAVERSE WINCH VALVE TO PORT M WHPU	RAST	Critical	Critical	SYNTHETIC RUBBER
REFER #1 COMPRESSOR SUCTION	REFRIGERATION	Critical	Critical	SYNTHETIC RUBBER
REFER #1 FREON LIQUID LINE	REFRIGERATION	Critical	Critical	SYNTHETIC RUBBER
REFER #2 COMPRESSOR SUCTION	REFRIGERATION	Critical	Critical	SYNTHETIC RUBBER
REFER #2 FREON LIQUID LINE	REFRIGERATION	Critical	Critical	SYNTHETIC RUBBER
DEMINERALIZER H/P DISCHARGE PUMP TO MEMBRANE	REVERSE OSMOSIS	Critical	Critical	SYNTHETIC RUBBER
DEMINERALIZER L/P SUCTION FILTER TO PUMP	REVERSE OSMOSIS	Critical	Non-Critical	SYNTHETIC RUBBER
RO #1A BRINE OVERBOARD	REVERSE OSMOSIS	Critical	Non-Critical	SYNTHETIC RUBBER
RO #1A FILTER DISCHARGE	REVERSE OSMOSIS	Critical	Non-Critical	SYNTHETIC RUBBER
RO #1A PERMEATE DISCHARGE	REVERSE OSMOSIS	Critical	Non-Critical	SYNTHETIC RUBBER

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EQUIPMENT DESCRIPTION	SYSTEM	OLD DESIGNATION	NEW DESIGNATION	TYPE
RO #1A PUMP DISCHARGE	REVERSE OSMOSIS	Critical	Critical	SYNTHETIC RUBBER
RO #1A PUMP SUCTION	REVERSE OSMOSIS	Critical	Non-Critical	SYNTHETIC RUBBER
RO #1A RECIRC DISCHARGE	REVERSE OSMOSIS	Critical	Non-Critical	SYNTHETIC RUBBER
RO #1A RECIRC INLET	REVERSE OSMOSIS	Critical	Non-Critical	SYNTHETIC RUBBER
RO #1A SKID H/P ASSEMBLY	REVERSE OSMOSIS	Critical	Critical	SYNTHETIC RUBBER
RO #1B FILTER DISCHARGE	REVERSE OSMOSIS	Critical	Non-Critical	SYNTHETIC RUBBER
RO #1B PERMEATE DISCHARGE	REVERSE OSMOSIS	Critical	Non-Critical	SYNTHETIC RUBBER
RO #1B PUMP DISCHARGE	REVERSE OSMOSIS	Critical	Critical	SYNTHETIC RUBBER
RO #1B PUMP SUCTION	REVERSE OSMOSIS	Critical	Non-Critical	SYNTHETIC RUBBER
RO #1B RECIRC DISCHARGE	REVERSE OSMOSIS	Critical	Non-Critical	SYNTHETIC RUBBER
RO #1B RECIRC INLET	REVERSE OSMOSIS	Critical	Non-Critical	SYNTHETIC RUBBER
RO #1B SKID H/P ASSEMBLY	REVERSE OSMOSIS	Critical	Critical	SYNTHETIC RUBBER
S/W PUMP #1 DISCHARGE	SEAWATER	Critical	Non-Critical	SYNTHETIC RUBBER
S/W PUMP #1 SUCTION	SEAWATER	Critical	Non-Critical	SYNTHETIC RUBBER
S/W PUMP #2 DISCHARGE	SEAWATER	Critical	Non-Critical	SYNTHETIC RUBBER
S/W PUMP #2 SUCTION	SEAWATER	Critical	Non-Critical	SYNTHETIC RUBBER

EQUIPMENT DESCRIPTION	SYSTEM	OLD DESIGNATION	NEW DESIGNATION	TYPE
S/W PUMP #3 DISCHARGE	SEAWATER	Critical	Non-Critical	SYNTHETIC RUBBER
S/W PUMP #3 SUCTION	SEAWATER	Critical	Non-Critical	SYNTHETIC RUBBER
S/W PUMP #4 DISCHARGE	SEAWATER	Critical	Non-Critical	SYNTHETIC RUBBER
S/W PUMP #4 SUCTION	SEAWATER	Critical	Non-Critical	SYNTHETIC RUBBER
S/W PUMP #5 DISCHARGE	SEAWATER	Critical	Non-Critical	SYNTHETIC RUBBER
S/W PUMP #5 SUCTION	SEAWATER	Critical	Non-Critical	SYNTHETIC RUBBER
HD-1077 COOLER L/P AIR TO EXP TANK	SONAR	Critical	Non-Critical	SYNTHETIC RUBBER
SSGTG #1 F/O & WATER WASH DRAIN	SSGTG	Critical	Critical	SYNTHETIC RUBBER
SSGTG #1 F/O INLET	SSGTG	Critical	Critical	SYNTHETIC RUBBER
SSGTG #1 S/W COOLING PUMP DISCHARGE	SSGTG	Critical	Non-Critical	SYNTHETIC RUBBER
SSGTG #1 S/W COOLING PUMP SUCTION	SSGTG	Critical	Non-Critical	SYNTHETIC RUBBER
SSGTG #1 S/W INLET	SSGTG	Critical	Non-Critical	SYNTHETIC RUBBER
SSGTG #1 S/W OUTLET	SSGTG	Critical	Non-Critical	SYNTHETIC RUBBER
SSGTG #1 SIGNAL AIR	SSGTG	Critical	Non-Critical	SYNTHETIC RUBBER
SSGTG #2 F/O & WATER WASH DRAIN	SSGTG	Critical	Critical	SYNTHETIC RUBBER
SSGTG #2 F/O INLET	SSGTG	Critical	Critical	SYNTHETIC RUBBER

EQUIPMENT DESCRIPTION	SYSTEM	OLD DESIGNATION	NEW DESIGNATION	TYPE
SSGTG #2 S/W COOLING PUMP DISCHARGE	SSGTG	Critical	Non-Critical	SYNTHETIC RUBBER
SSGTG #2 S/W COOLING PUMP SUCTION	SSGTG	Critical	Non-Critical	SYNTHETIC RUBBER
SSGTG #2 S/W INLET	SSGTG	Critical	Non-Critical	SYNTHETIC RUBBER
SSGTG #2 S/W OUTLET	SSGTG	Critical	Non-Critical	SYNTHETIC RUBBER
SSGTG #2 SIGNAL AIR	SSGTG	Critical	Non-Critical	SYNTHETIC RUBBER
SSGTG #3 F/O & WATER WASH DRAIN	SSGTG	Critical	Critical	SYNTHETIC RUBBER
SSGTG #3 F/O INLET	SSGTG	Critical	Critical	SYNTHETIC RUBBER
SSGTG #3 S/W COOLING PUMP DISCHARGE	SSGTG	Critical	Non-Critical	SYNTHETIC RUBBER
SSGTG #3 S/W COOLING PUMP SUCTION	SSGTG	Critical	Non-Critical	SYNTHETIC RUBBER
SSGTG #3 S/W INLET	SSGTG	Critical	Non-Critical	SYNTHETIC RUBBER
SSGTG #3 S/W OUTLET	SSGTG	Critical	Non-Critical	SYNTHETIC RUBBER
SSGTG #3 SIGNAL AIR	SSGTG	Critical	Non-Critical	SYNTHETIC RUBBER
SSGTG #3 WATER WASH INLET	SSGTG	Critical	Non-Critical	SYNTHETIC RUBBER
1A FILL & DRAIN	STEERING	Critical	Non-Critical	SYNTHETIC RUBBER
1A FILTER INLET	STEERING	Critical	Critical	SYNTHETIC RUBBER
1A FILTER INLET	STEERING	Critical	Critical	SYNTHETIC RUBBER

EQUIPMENT DESCRIPTION	SYSTEM	OLD DESIGNATION	NEW DESIGNATION	TYPE
1A HEAD TANK TO POWER UNIT	STEERING	Critical	Non-Critical	SYNTHETIC RUBBER
1A HOT OIL SENSOR	STEERING	Critical	Critical	SYNTHETIC RUBBER
1A MAIN PUMP INLET	STEERING	Critical	Critical	SYNTHETIC RUBBER
1A OIL PUMP DISCHARGE	STEERING	Critical	Critical	SYNTHETIC RUBBER
1A OIL PUMP DISCHARGE	STEERING	Critical	Critical	SYNTHETIC RUBBER
1A RAM MAIN SERVO SUPPLY	STEERING	Critical	Critical	SYNTHETIC RUBBER
1A RAM MAIN SERVO SUPPLY	STEERING	Critical	Critical	SYNTHETIC RUBBER
1A S/W COOLING DISCHARGE	STEERING	Critical	Non-Critical	SYNTHETIC RUBBER
1A S/W COOLING SUPPLY	STEERING	Critical	Non-Critical	SYNTHETIC RUBBER
1A SUPPLY FROM HEAD TANK	STEERING	Critical	Non-Critical	SYNTHETIC RUBBER
1B FILL & DRAIN	STEERING	Critical	Non-Critical	SYNTHETIC RUBBER
1B FILTER INLET	STEERING	Critical	Critical	SYNTHETIC RUBBER
1B FILTER INLET	STEERING	Critical	Critical	SYNTHETIC RUBBER
1B HEAD TANK TO POWER UNIT	STEERING	Critical	Non-Critical	SYNTHETIC RUBBER
1B HOT OIL SENSOR	STEERING	Critical	Critical	SYNTHETIC RUBBER
1B MAIN PUMP INLET	STEERING	Critical	Critical	SYNTHETIC RUBBER

EQUIPMENT DESCRIPTION	SYSTEM	OLD DESIGNATION	NEW DESIGNATION	TYPE
1B OIL PUMP DISCHARGE	STEERING	Critical	Critical	SYNTHETIC RUBBER
1B OIL PUMP DISCHARGE	STEERING	Critical	Critical	SYNTHETIC RUBBER
1B RAM MAIN SERVO SUPPLY	STEERING	Critical	Critical	SYNTHETIC RUBBER
1B RAM MAIN SERVO SUPPLY	STEERING	Critical	Critical	SYNTHETIC RUBBER
1B S/W COOLING DISCHARGE	STEERING	Critical	Non-Critical	SYNTHETIC RUBBER
1B S/W COOLING SUPPLY	STEERING	Critical	Non-Critical	SYNTHETIC RUBBER
1B SUPPLY FROM HEAD TANK	STEERING	Critical	Non-Critical	SYNTHETIC RUBBER
2A FILL & DRAIN	STEERING	Critical	Non-Critical	SYNTHETIC RUBBER
2A FILTER INLET	STEERING	Critical	Critical	SYNTHETIC RUBBER
2A FILTER INLET	STEERING	Critical	Critical	SYNTHETIC RUBBER
2A HEAD TANK TO POWER UNIT	STEERING	Critical	Non-Critical	SYNTHETIC RUBBER
2A HOT OIL SENSOR	STEERING	Critical	Critical	SYNTHETIC RUBBER
2A MAIN PUMP INLET	STEERING	Critical	Critical	SYNTHETIC RUBBER
2A OIL PUMP DISCHARGE	STEERING	Critical	Critical	SYNTHETIC RUBBER
2A OIL PUMP DISCHARGE	STEERING	Critical	Critical	SYNTHETIC RUBBER
2A RAM MAIN SERVO SUPPLY	STEERING	Critical	Critical	SYNTHETIC RUBBER

EQUIPMENT DESCRIPTION	SYSTEM	OLD DESIGNATION	NEW DESIGNATION	TYPE
2A RAM MAIN SERVO SUPPLY	STEERING	Critical	Critical	SYNTHETIC RUBBER
2A S/W COOLING DISCHARGE	STEERING	Critical	Non-Critical	SYNTHETIC RUBBER
2A S/W COOLING SUPPLY	STEERING	Critical	Non-Critical	SYNTHETIC RUBBER
2A SUPPLY FROM HEAD TANK	STEERING	Critical	Non-Critical	SYNTHETIC RUBBER
2B FILL & DRAIN	STEERING	Critical	Non-Critical	SYNTHETIC RUBBER
2B FILTER INLET	STEERING	Critical	Critical	SYNTHETIC RUBBER
2B FILTER INLET	STEERING	Critical	Critical	SYNTHETIC RUBBER
2B HEAD TANK TO POWER UNIT	STEERING	Critical	Non-Critical	SYNTHETIC RUBBER
2B HOT OIL SENSOR	STEERING	Critical	Critical	SYNTHETIC RUBBER
2B MAIN PUMP INLET	STEERING	Critical	Critical	SYNTHETIC RUBBER
2B OIL PUMP DISCHARGE	STEERING	Critical	Critical	SYNTHETIC RUBBER
2B OIL PUMP DISCHARGE	STEERING	Critical	Critical	SYNTHETIC RUBBER
2B RAM MAIN SERVO SUPPLY	STEERING	Critical	Critical	SYNTHETIC RUBBER
2B RAM MAIN SERVO SUPPLY	STEERING	Critical	Critical	SYNTHETIC RUBBER
2B S/W COOLING DISCHARGE	STEERING	Critical	Non-Critical	SYNTHETIC RUBBER
2B S/W COOLING SUPPLY	STEERING	Critical	Non-Critical	SYNTHETIC RUBBER

EQUIPMENT DESCRIPTION	SYSTEM	OLD DESIGNATION	NEW DESIGNATION	TYPE
2B SUPPLY FROM HEAD TANK	STEERING	Critical	Non-Critical	SYNTHETIC RUBBER
FILL & DRAIN SUCTION FROM STORAGE TANK	STEERING	Critical	Non-Critical	SYNTHETIC RUBBER
GTM 2A F/O MANIFOLD DRAIN	STEERING	Critical	Critical	SYNTHETIC RUBBER
HAND PUMP DISCHARGE	STEERING	Critical	Critical	SYNTHETIC RUBBER
HAND PUMP SUCTION	STEERING	Critical	Critical	SYNTHETIC RUBBER
ISOLATION HPU TO 1A	STEERING	Critical	Critical	SYNTHETIC RUBBER
ISOLATION HPU TO 1B	STEERING	Critical	Critical	SYNTHETIC RUBBER
ISOLATION HPU TO 2A	STEERING	Critical	Critical	SYNTHETIC RUBBER
ISOLATION HPU TO 2B	STEERING	Critical	Critical	SYNTHETIC RUBBER
PORT RAM AFT	STEERING	Critical	Critical	SYNTHETIC RUBBER
PORT RAM FWD	STEERING	Critical	Critical	SYNTHETIC RUBBER
STBD RAM AFT	STEERING	Critical	Critical	SYNTHETIC RUBBER
STBD RAM FWD	STEERING	Critical	Critical	SYNTHETIC RUBBER
STORAGE TANK FILL	STEERING	Critical	Non-Critical	SYNTHETIC RUBBER
XFER PUMP DISCHARGE	STEERING	Critical	Critical	SYNTHETIC RUBBER
XFER PUMP SUCTION	STEERING	Critical	Critical	SYNTHETIC RUBBER

EQUIPMENT DESCRIPTION	SYSTEM	OLD DESIGNATION	NEW DESIGNATION	TYPE
WINCH UNIT 1 HAND PUMP	TSS	Critical	Critical	SYNTHETIC RUBBER
WINCH UNIT 1 HYDRAULIC BRAKE	TSS	Critical	Critical	SYNTHETIC RUBBER
WINCH UNIT 1 PAWL LOCK RETURN	TSS	Critical	Critical	SYNTHETIC RUBBER
WINCH UNIT 1 PAWL LOCK SUPPLY	TSS	Critical	Critical	SYNTHETIC RUBBER
DOOR OPENING AIR DRIVE	UWS	Critical	Critical	SYNTHETIC RUBBER
DOOR OPENING AIR DRIVE	UWS	Critical	Critical	SYNTHETIC RUBBER
MK32 MOD15 HP AIR CHARGING	UWS	Critical	Critical	SYNTHETIC RUBBER
THS DOWN CONTROL AIR TO HOIST MOTOR	UWS	Critical	Critical	SYNTHETIC RUBBER
THS 4 WAY CONT VALVE TO HOIST MOTOR	UWS	Critical	Critical	SYNTHETIC RUBBER
THS 4 WAY CONT VALVE TO SHUTTLE VALVE	UWS	Critical	Critical	SYNTHETIC RUBBER
THS 4 WAY CONT VALVE TO SHUTTLE VALVE	UWS	Critical	Critical	SYNTHETIC RUBBER
THS 4 WAY CONT VALVE TO TRAVERSE MOTOR	UWS	Critical	Critical	SYNTHETIC RUBBER
THS 4 WAY CONT VALVE TO TRAVERSE MOTOR	UWS	Critical	Critical	SYNTHETIC RUBBER
THS 4 WAY CONTROL TO HOIST MOTOR	UWS	Critical	Critical	SYNTHETIC RUBBER
THS CONTROL AIR TO PENDANT	UWS	Critical	Critical	SYNTHETIC RUBBER
THS FORWARD CONTROL AIR TO TRAVERSE MTR	UWS	Critical	Critical	SYNTHETIC RUBBER

EQUIPMENT DESCRIPTION	SYSTEM	OLD DESIGNATION	NEW DESIGNATION	TYPE
THS HOIST MOTOR TO SHUTTLE VALVE	UWS	Critical	Critical	SYNTHETIC RUBBER
THS HOSE REEL TO CARRIAGE ASSEMBLY	UWS	Critical	Critical	SYNTHETIC RUBBER
THS REGULATOR TO HOSE REEL	UWS	Critical	Critical	SYNTHETIC RUBBER
THS REV CONTROL AIR TO TRANSVERSE MOTOR	UWS	Critical	Critical	SYNTHETIC RUBBER
THS SAFETY INTERLOCK TO 4 WAY CONT VALVE	UWS	Critical	Critical	SYNTHETIC RUBBER
THS SAFETY INTERLOCK TO 4 WAY CONT VALVE	UWS	Critical	Critical	SYNTHETIC RUBBER
THS UP CONTROL AIR TO HOIST MOTOR	UWS	Critical	Critical	SYNTHETIC RUBBER
SEWAGE PUMP #1A DISCHARGE	VCHT	Critical	Critical	SYNTHETIC RUBBER
SEWAGE PUMP #1A SUCTION	VCHT	Critical	Critical	SYNTHETIC RUBBER
SEWAGE PUMP #1B DISCHARGE	VCHT	Critical	Critical	SYNTHETIC RUBBER
SEWAGE PUMP #1B SUCTION	VCHT	Critical	Critical	SYNTHETIC RUBBER
SEWAGE PUMP #2A DISCHARGE	VCHT	Critical	Critical	SYNTHETIC RUBBER
SEWAGE PUMP #2A SUCTION	VCHT	Critical	Critical	SYNTHETIC RUBBER
SEWAGE PUMP #2B DISCHARGE	VCHT	Critical	Critical	SYNTHETIC RUBBER
SEWAGE PUMP #2B SUCTION	VCHT	Critical	Critical	SYNTHETIC RUBBER
VCHT EJECTOR PUMP #1A DISCHARGE	VCHT	Critical	Critical	SYNTHETIC RUBBER

EQUIPMENT DESCRIPTION	SYSTEM	OLD DESIGNATION	NEW DESIGNATION	TYPE
VCHT EJECTOR PUMP #1A SUCTION	VCHT	Critical	Critical	SYNTHETIC RUBBER
VCHT EJECTOR PUMP #1B DISCHARGE	VCHT	Critical	Critical	SYNTHETIC RUBBER
VCHT EJECTOR PUMP #1B SUCTION	VCHT	Critical	Critical	SYNTHETIC RUBBER
VCHT EJECTOR PUMP #2A DISCHARGE	VCHT	Critical	Critical	SYNTHETIC RUBBER
VCHT EJECTOR PUMP #2A SUCTION	VCHT	Critical	Critical	SYNTHETIC RUBBER
VCHT EJECTOR PUMP #2B DISCHARGE	VCHT	Critical	Critical	SYNTHETIC RUBBER
VCHT EJECTOR PUMP #2B SUCTION	VCHT	Critical	Critical	SYNTHETIC RUBBER
DELUGE MODULE 1 CELL 1	VLS	Critical	Critical	SYNTHETIC RUBBER
DELUGE MODULE 1 CELL 2	VLS	Critical	Critical	SYNTHETIC RUBBER
DELUGE MODULE 1 CELL 3	VLS	Critical	Critical	SYNTHETIC RUBBER
DELUGE MODULE 1 CELL 4	VLS	Critical	Critical	SYNTHETIC RUBBER
DELUGE MODULE 1 CELL 5	VLS	Critical	Critical	SYNTHETIC RUBBER
DELUGE MODULE 1 CELL 6	VLS	Critical	Critical	SYNTHETIC RUBBER
DELUGE MODULE 1 CELL 7	VLS	Critical	Critical	SYNTHETIC RUBBER
DELUGE MODULE 1 CELL 8	VLS	Critical	Critical	SYNTHETIC RUBBER
DELUGE MODULE 2 CELL 1	VLS	Critical	Critical	SYNTHETIC RUBBER

EQUIPMENT DESCRIPTION	SYSTEM	OLD DESIGNATION	NEW DESIGNATION	TYPE
DELUGE MODULE 2 CELL 2	VLS	Critical	Critical	SYNTHETIC RUBBER
DELUGE MODULE 2 CELL 3	VLS	Critical	Critical	SYNTHETIC RUBBER
DELUGE MODULE 2 CELL 4	VLS	Critical	Critical	SYNTHETIC RUBBER
DELUGE MODULE 2 CELL 5	VLS	Critical	Critical	SYNTHETIC RUBBER
DELUGE MODULE 2 CELL 6	VLS	Critical	Critical	SYNTHETIC RUBBER
DELUGE MODULE 2 CELL 7	VLS	Critical	Critical	SYNTHETIC RUBBER
DELUGE MODULE 2 CELL 8	VLS	Critical	Critical	SYNTHETIC RUBBER
DELUGE MODULE 3 CELL 1	VLS	Critical	Critical	SYNTHETIC RUBBER
DELUGE MODULE 3 CELL 2	VLS	Critical	Critical	SYNTHETIC RUBBER
DELUGE MODULE 3 CELL 3	VLS	Critical	Critical	SYNTHETIC RUBBER
DELUGE MODULE 3 CELL 4	VLS	Critical	Critical	SYNTHETIC RUBBER
DELUGE MODULE 3 CELL 5	VLS	Critical	Critical	SYNTHETIC RUBBER
DELUGE MODULE 3 CELL 6	VLS	Critical	Critical	SYNTHETIC RUBBER
DELUGE MODULE 3 CELL 7	VLS	Critical	Critical	SYNTHETIC RUBBER
DELUGE MODULE 3 CELL 8	VLS	Critical	Critical	SYNTHETIC RUBBER
DELUGE MODULE 4 CELL 1	VLS	Critical	Critical	SYNTHETIC RUBBER

EQUIPMENT DESCRIPTION	SYSTEM	OLD DESIGNATION	NEW DESIGNATION	TYPE
DELUGE MODULE 4 CELL 2	VLS	Critical	Critical	SYNTHETIC RUBBER
DELUGE MODULE 4 CELL 3	VLS	Critical	Critical	SYNTHETIC RUBBER
DELUGE MODULE 4 CELL 4	VLS	Critical	Critical	SYNTHETIC RUBBER
DELUGE MODULE 4 CELL 5	VLS	Critical	Critical	SYNTHETIC RUBBER
DELUGE MODULE 4 CELL 6	VLS	Critical	Critical	SYNTHETIC RUBBER
DELUGE MODULE 4 CELL 7	VLS	Critical	Critical	SYNTHETIC RUBBER
DELUGE MODULE 4 CELL 8	VLS	Critical	Critical	SYNTHETIC RUBBER
DELUGE MODULE 5 CELL 1	VLS	Critical	Critical	SYNTHETIC RUBBER
DELUGE MODULE 5 CELL 1	VLS	Critical	Critical	SYNTHETIC RUBBER
DELUGE MODULE 5 CELL 2	VLS	Critical	Critical	SYNTHETIC RUBBER
DELUGE MODULE 5 CELL 2	VLS	Critical	Critical	SYNTHETIC RUBBER
DELUGE MODULE 5 CELL 3	VLS	Critical	Critical	SYNTHETIC RUBBER
DELUGE MODULE 5 CELL 3	VLS	Critical	Critical	SYNTHETIC RUBBER
DELUGE MODULE 5 CELL 4	VLS	Critical	Critical	SYNTHETIC RUBBER
DELUGE MODULE 5 CELL 4	VLS	Critical	Critical	SYNTHETIC RUBBER
DELUGE MODULE 5 CELL 5	VLS	Critical	Critical	SYNTHETIC RUBBER

EQUIPMENT DESCRIPTION	SYSTEM	OLD DESIGNATION	NEW DESIGNATION	TYPE
DELUGE MODULE 5 CELL 5	VLS	Critical	Critical	SYNTHETIC RUBBER
DELUGE MODULE 6 CELL 1	VLS	Critical	Critical	SYNTHETIC RUBBER
DELUGE MODULE 6 CELL 1	VLS	Critical	Critical	SYNTHETIC RUBBER
DELUGE MODULE 6 CELL 2	VLS	Critical	Critical	SYNTHETIC RUBBER
DELUGE MODULE 6 CELL 2	VLS	Critical	Critical	SYNTHETIC RUBBER
DELUGE MODULE 6 CELL 3	VLS	Critical	Critical	SYNTHETIC RUBBER
DELUGE MODULE 6 CELL 3	VLS	Critical	Critical	SYNTHETIC RUBBER
DELUGE MODULE 6 CELL 4	VLS	Critical	Critical	SYNTHETIC RUBBER
DELUGE MODULE 6 CELL 4	VLS	Critical	Critical	SYNTHETIC RUBBER
DELUGE MODULE 6 CELL 5	VLS	Critical	Critical	SYNTHETIC RUBBER
DELUGE MODULE 6 CELL 5	VLS	Critical	Critical	SYNTHETIC RUBBER
DELUGE MODULE 6 CELL 6	VLS	Critical	Critical	SYNTHETIC RUBBER
DELUGE MODULE 6 CELL 6	VLS	Critical	Critical	SYNTHETIC RUBBER
DELUGE MODULE 6 CELL 7	VLS	Critical	Critical	SYNTHETIC RUBBER
DELUGE MODULE 6 CELL 7	VLS	Critical	Critical	SYNTHETIC RUBBER
DELUGE MODULE 6 CELL 8	VLS	Critical	Critical	SYNTHETIC RUBBER

EQUIPMENT DESCRIPTION	SYSTEM	OLD DESIGNATION	NEW DESIGNATION	TYPE
DELUGE MODULE 6 CELL 8	VLS	Critical	Critical	SYNTHETIC RUBBER
DELUGE MODULE 7 CELL 1	VLS	Critical	Critical	SYNTHETIC RUBBER
DELUGE MODULE 7 CELL 1	VLS	Critical	Critical	SYNTHETIC RUBBER
DELUGE MODULE 7 CELL 2	VLS	Critical	Critical	SYNTHETIC RUBBER
DELUGE MODULE 7 CELL 2	VLS	Critical	Critical	SYNTHETIC RUBBER
DELUGE MODULE 7 CELL 3	VLS	Critical	Critical	SYNTHETIC RUBBER
DELUGE MODULE 7 CELL 3	VLS	Critical	Critical	SYNTHETIC RUBBER
DELUGE MODULE 7 CELL 4	VLS	Critical	Critical	SYNTHETIC RUBBER
DELUGE MODULE 7 CELL 4	VLS	Critical	Critical	SYNTHETIC RUBBER
DELUGE MODULE 7 CELL 5	VLS	Critical	Critical	SYNTHETIC RUBBER
DELUGE MODULE 7 CELL 5	VLS	Critical	Critical	SYNTHETIC RUBBER
DELUGE MODULE 7 CELL 6	VLS	Critical	Critical	SYNTHETIC RUBBER
DELUGE MODULE 7 CELL 6	VLS	Critical	Critical	SYNTHETIC RUBBER
DELUGE MODULE 7 CELL 7	VLS	Critical	Critical	SYNTHETIC RUBBER
DELUGE MODULE 7 CELL 7	VLS	Critical	Critical	SYNTHETIC RUBBER
DELUGE MODULE 7 CELL 8	VLS	Critical	Critical	SYNTHETIC RUBBER

EQUIPMENT DESCRIPTION	SYSTEM	OLD DESIGNATION	NEW DESIGNATION	TYPE
DELUGE MODULE 7 CELL 8	VLS	Critical	Critical	SYNTHETIC RUBBER
DELUGE MODULE 8 CELL 1	VLS	Critical	Critical	SYNTHETIC RUBBER
DELUGE MODULE 8 CELL 1	VLS	Critical	Critical	SYNTHETIC RUBBER
DELUGE MODULE 8 CELL 2	VLS	Critical	Critical	SYNTHETIC RUBBER
DELUGE MODULE 8 CELL 2	VLS	Critical	Critical	SYNTHETIC RUBBER
DELUGE MODULE 8 CELL 3	VLS	Critical	Critical	SYNTHETIC RUBBER
DELUGE MODULE 8 CELL 3	VLS	Critical	Critical	SYNTHETIC RUBBER
DELUGE MODULE 8 CELL 4	VLS	Critical	Critical	SYNTHETIC RUBBER
DELUGE MODULE 8 CELL 4	VLS	Critical	Critical	SYNTHETIC RUBBER
DELUGE MODULE 8 CELL 5	VLS	Critical	Critical	SYNTHETIC RUBBER
DELUGE MODULE 8 CELL 5	VLS	Critical	Critical	SYNTHETIC RUBBER
DELUGE MODULE 8 CELL 6	VLS	Critical	Critical	SYNTHETIC RUBBER
DELUGE MODULE 8 CELL 6	VLS	Critical	Critical	SYNTHETIC RUBBER
DELUGE MODULE 8 CELL 7	VLS	Critical	Critical	SYNTHETIC RUBBER
DELUGE MODULE 8 CELL 7	VLS	Critical	Critical	SYNTHETIC RUBBER
DELUGE MODULE 8 CELL 8	VLS	Critical	Critical	SYNTHETIC RUBBER

EQUIPMENT DESCRIPTION	SYSTEM	OLD DESIGNATION	NEW DESIGNATION	TYPE
DELUGE MODULE 8 CELL 8	VLS	**Critical**	**Critical**	SYNTHETIC RUBBER
DELUGE SUPPLY	VLS	**Critical**	**Critical**	SYNTHETIC RUBBER
DELUGE SUPPLY	VLS	**Critical**	**Critical**	SYNTHETIC RUBBER