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TITLE:	ORIGINATOR <u>Sam T. Fogarty</u> <u>2-13-84</u> Date			
GUIDELINES FOR THE PROTECTION OF PERMANENT PLANT EQUIPMENT	REVIEWED BY: <u>MBP</u> <u>2/27/84</u> Date			
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	CONSTRUCTION PROJECT MGR			

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1.0 INTRODUCTION

The purpose of this procedure is to provide guidance for the care of permanent plant equipment to the interfacing craft organizations. Although not all conceivable situations can be discussed within the scope of this procedure, the use of good workmanship practices and common sense will prevent damage.

2.0 PROCEDURE

2.1 ELECTRICAL CABLE AND CABLE TRAYS

2.1.1 Electrical cables are very susceptible to damage, and minor damage can result in major rework. Care must be used when working around cables to ensure they are properly protected. The following precautions are necessary:

1. Cables must be covered with fire resistant materials anytime welding or torch cutting is being performed in an area that could damage cable.
2. Foreign items such as nuts, bolts, structural steel, pipe, fittings, etc. shall not be stored in cable trays. Every effort should be made to keep such items out of the trays, and to remove them when they are found in the trays.

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3. Metal grating over cable trays should be covered to prevent trash from accumulating in the trays.
4. Flex conduit to equipment should not be stepped on or used to support any weight. Damage to flex conduit may require removal and reinstallation of cable just to correct the flex deficiency.
5. Trays containing cables shall not be used as walkways. Besides being potentially damaging to the cables, the cables could be energized and cause a severe personnel hazard.
6. Trays shall not be used as work platforms.  
Exceptions: When standard work platforms or work accesses are not feasible, the following procedure will be used:
  - a. A  $\frac{1}{2}$ " piece of plywood or thicker extending across the cable tray from gunnel to gunnel stabilized so it can not be accidentally dislodged may be used as a temporary work platform.
  - b. Alternatively a 3 fold fire blanket covered with an approved electrical rubber blanket may be used when leaning over or into a cable tray but not for the purpose of supporting full body weight i.e. standing, kneeling, etc.

Trays shall not be used as structural supports, or to lift from.

7. Hoses and cables may be suspended from the bottom of trays, but shall not be laid across the trays.
8. Doors and covers to electrical equipment such as transformers, switch gear, valve motor operators, etc. should be in place when work is not being performed on the item.

## 2.2 MECHANICAL AND ELECTRICAL EQUIPMENT

2.2.1 This equipment may have delicate items such as indicators, gauges, tubing, etc., which need to be protected. Care should be taken when working on or around equipment to protect the delicate parts. Protective coverings, such as wooden boxes or shields, should be installed and maintained whenever necessary.

2.2.2 All entrances to electrical equipment having sealed termination compartments shall be covered with suitable material (i.e., conduit plug, tape, etc.) when flexible conduit is removed from the equipment for work activities.



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2.3	PIPING				
2.3.1	Pipe caps/tape are used to seal openings to piping systems and components. The purpose of the seals is to keep out trash, foreign objects, rodents, and to maintain system cleanliness requirements. Such seals should be removed only by authorized personnel. Seals not in place should be reported to the Pipe Department.				
2.3.2	Pipe must be stored above the ground in racks or on dunnage to help prevent contamination as discussed in paragraph 2.3.1 above.				
2.3.3	Installed pipe, especially pipe connected to valves and equipment, must be properly supported. Where pipe connected to valves and equipment that is supported by temporary hangers, under no circumstances may temporary hangers be removed by any craft other than the Pipe Department. Where pipe is connected to valves and equipment that is supported by permanent hangers, under no circumstances may hangers be removed by any other craft other than the Hanger Department.				
2.4	COATINGS/PAINT				
2.4.1	Coatings and paint have the primary function of preventing rust and providing ease of decontamination during the operations phase. Coatings and paint are easily damaged by activities such as welding, setting of equipment, careless climbing, spitting, etc. Care should be exercised when working around coated/painted equipment or concrete.				
2.5	RODENT CONTROL				
2.5.1	Rodent control can best be maintained by good housekeeping practices. Food scraps attract rodents, and the congestion in the plant provides them many hiding places. Rodents in the plant can cause damage by nests being built in equipment, chewing on insulation, etc. Food scraps should always be disposed of properly.				
2.6	SUPPORTS				
2.6.1	The congestion in the buildings make support installation very difficult. Supports should be used only for their intended purpose. Rigging off supports can damage the supports and/or support anchors. Such rigging practices should be avoided unless authorized by Engineering.				



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2.7 INSTRUMENTATION \*

2.7.1 Instrumentation and instrumentation tubing are very delicate and difficult to replace. These items are not designed to support the weight of an adult and should not be climbed on, knocked around, or used to support any weight.

2.8 WELDING

2.8.1 General precautionary measures are provided in the discipline procedure. However, particular attention should be given to the following items:

1. Protective coverings should be installed to protect items where welding or torch cutting could cause damage;
2. Arc strikes shall be avoided by properly suspending welding leads. Welding leads shall not be draped across plant equipment;
3. Welding leads shall not be grounded to permanent plant equipment which could be damaged by the grounding, e.g., pumps, motors, seismic limiters, cable trays, conduit, etc.

