SAFETY PRACTICES FOR SILICON RECTIFIERS

INTRODUCTION

All Westinghouse silicon rectifiers are designed in accordance with the NEMA Safety Code for Semiconductor Rectifier Units - Pub. No. RI1-1968.

Inherently, silicon rectifiers have a high packaging density which results in a relatively close spacing between components that are at different potentials. It is, therefore, essential that no foreign objects such as hardware, tools, test leads or other conductive foreign materials remain in the rectifier when it is energized.

It is also imperative that insulating surfaces be kept clean and free from conductive contaminents as required by local conditions. It has been found that fluorides and chlorides present in many industrial atmospheres combine with atmospheric moisture to form a family of acids which can attack metal surfaces to form hygroscopic metalic salts which become conductive in the presence of high humidity, moisture or condensate.

TESTING

There is normally no need for personnel to have access to the inside of the rectifier cubicle when it is energized.

Protective devices are provided to monitor all critical functions such as cooling flow, overtemperature, ground faults and overcurrent. These protective devices give an alarm or trip the rectifier if a malfunction occurs.

Door interlocks are normally recommended and are supplied unless otherwise specified by the user. The door interlocks will trip the rectifier if a door is opened while the rectifier is energized.

Viewing ports are provided so that the diode failure and surge network failure lights are visible from the outside of the rectifier cubicle.

In the event that testing an energized rectifier should ever be considered a necessity, the Westinghouse Service Department should be contacted and the purpose and nature of the test outlined. The Service Department will then confer with the factory and a recommended test procedure will be supplied. This procedure will specify the test equipment, test procedures and safety precautions that should be exercised while performing the test in order to insure maximum safety to both personnel and equipment.