

ATTACHMENT

ITT GRINNELL CORPORATION
PROVIDENCE, RI
TESTING OF SIZE 2A FIGURE 215
STIFF CLAMP
OVEN-HEATED TO 650°
OCTOBER 28, 1982

PRODUCT ENGINEERING SECTION
PIPE HANGER DIVISION
REPORT NO. PE-452

ENGINEER: William A. Carter DATE 10/28/82
CHECKED: William A. Carter DATE 10/28/82
APPROVED: P. J. Hannell / ELL DATE 10/28/82

ABSTRACT

This report outlines the testing of ITT Grinnell's Size 2A Figure 215 stiff clamp under an oven-heated condition.

PURPOSE

The purpose of this report is to identify any torque loss due to temperature.

TESTING APPARATUS

ULTRA Temperature oven, 760° fahrenheit capacity; Leeds and Northrup speedomax recorder, 2000° fahrenheit capacity, calibrated October 21, 1982.

TEST SET-UP

The pipe clamp shall be secured around the pipe spool. A thermal couple shall be tack welded to the pipe spool to assure that the spool will reach a maximum temperature of 650° fahrenheit. Place the clamp in the oven and attach the thermal couple to the recorder.

PROCEDURE

1. We secured the pipe clamp around the spool with a torque value of 40 foot lbs. Our installation instructions indicate that 35 foot lbs. are required for the Size 2A clamp. We increased the torque by fifteen (15) percent in order to simulate a pressurized pipe line.
2. Place the clamp and spool in the oven.

DISCUSSION

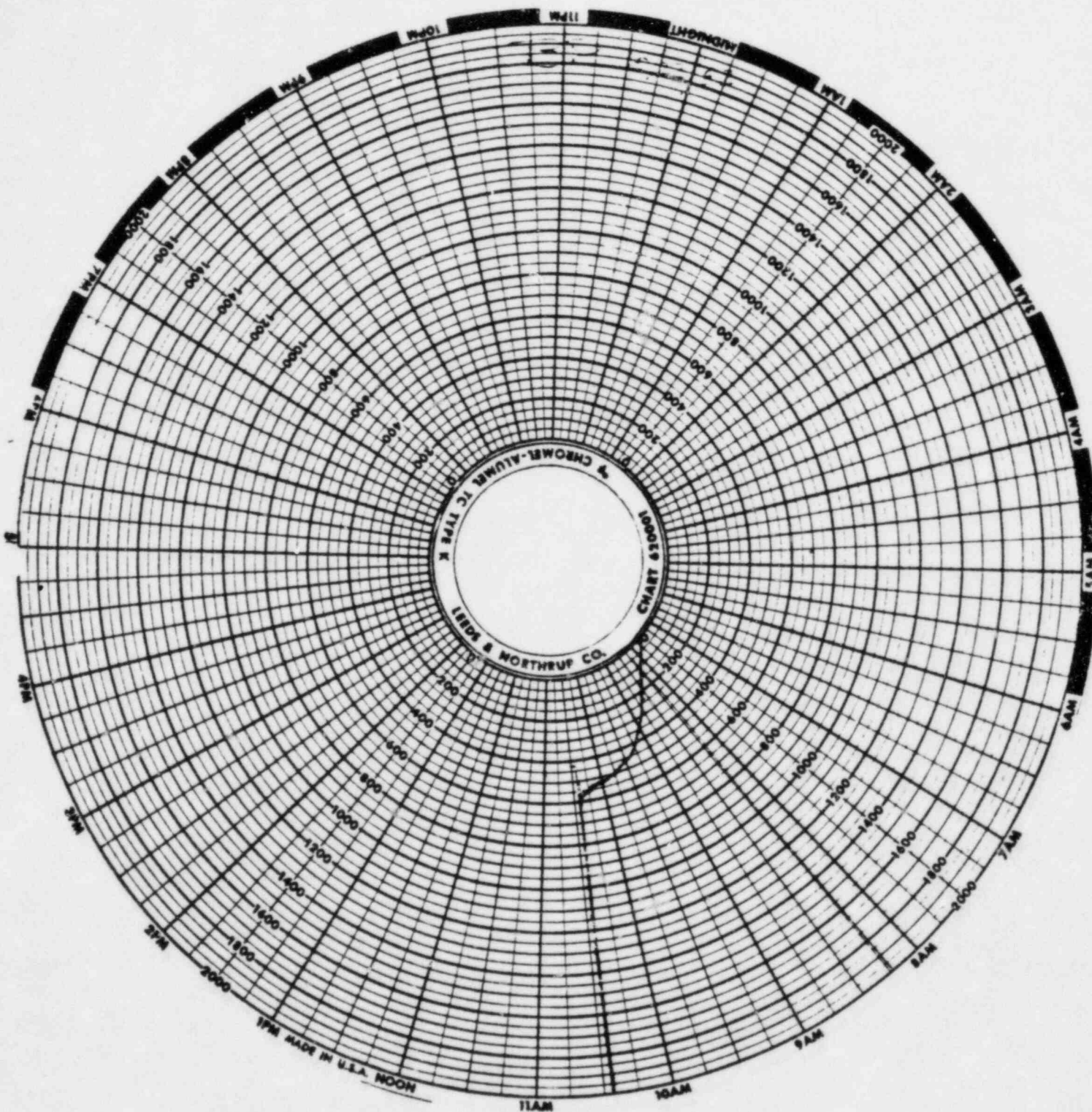
The results of the test were favorable in that there was no torque loss. This clearly indicates that the clamps are capable of withstanding a temperature of 650° fahrenheit without losing the necessary torque generated in our test report PE-21. Therefore, since no torque loss existed the maximum recommended loads and stiffnesses still apply at 650° fahrenheit.

BY BP DATE 10/22/82SUBJECT FIG. 215 OVEN CHART SHEET NO. 1 OF 5CHKD. BY WMP DATE 10/28/82

CUSTOMER _____ SUPPORT I.D. _____

PROJECT VIPSS OTHER I.D. PE-452

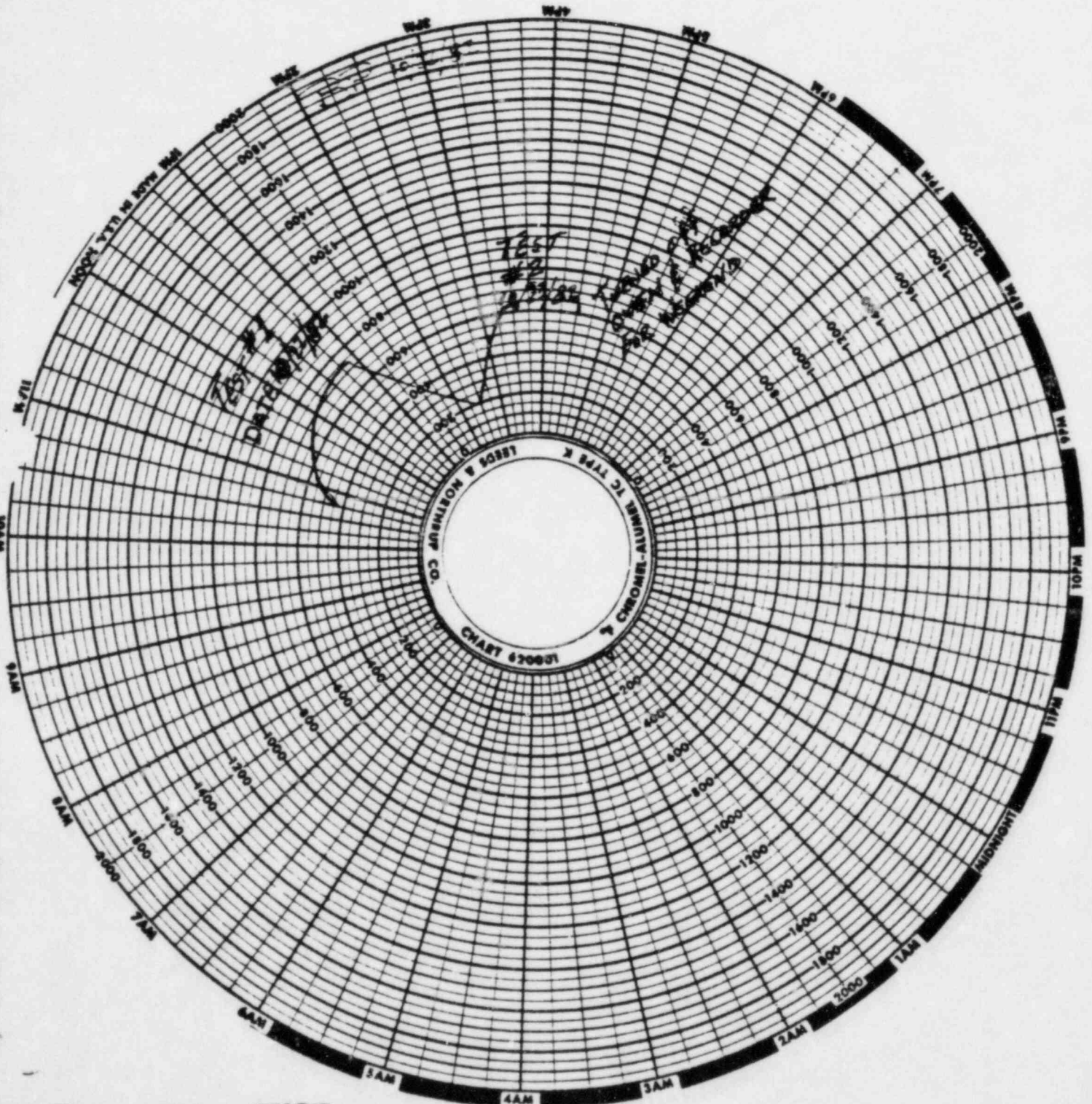
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SWITCHED CLAMP to ANOTHER OVEN SINCE 650° COULD NOT BE ACHIEVED.

BY BP DATE 10/22/82
CHKD. BY NMP DATE 10/28/82SUBJECT FIG. 215 OVEN CHART
CUSTOMER
PROJECT WPSSSHEET NO. 2 OF 5
SUPPORT I.D.
OTHER I.D. PE-452

REF. PAGE



TEMPERATURE STARTS
@ APPROX. 400° DUE TO THE
SWITCH OF CLAMP FROM ONE
OVEN TO ANOTHER.

BY: BP DATE: 10/25/82

SUBJECT: FIG. 215 OVEN-CHART

SHEET NO. 3 OF 5

CHKD. BY: WMP DATE: 10/28/82

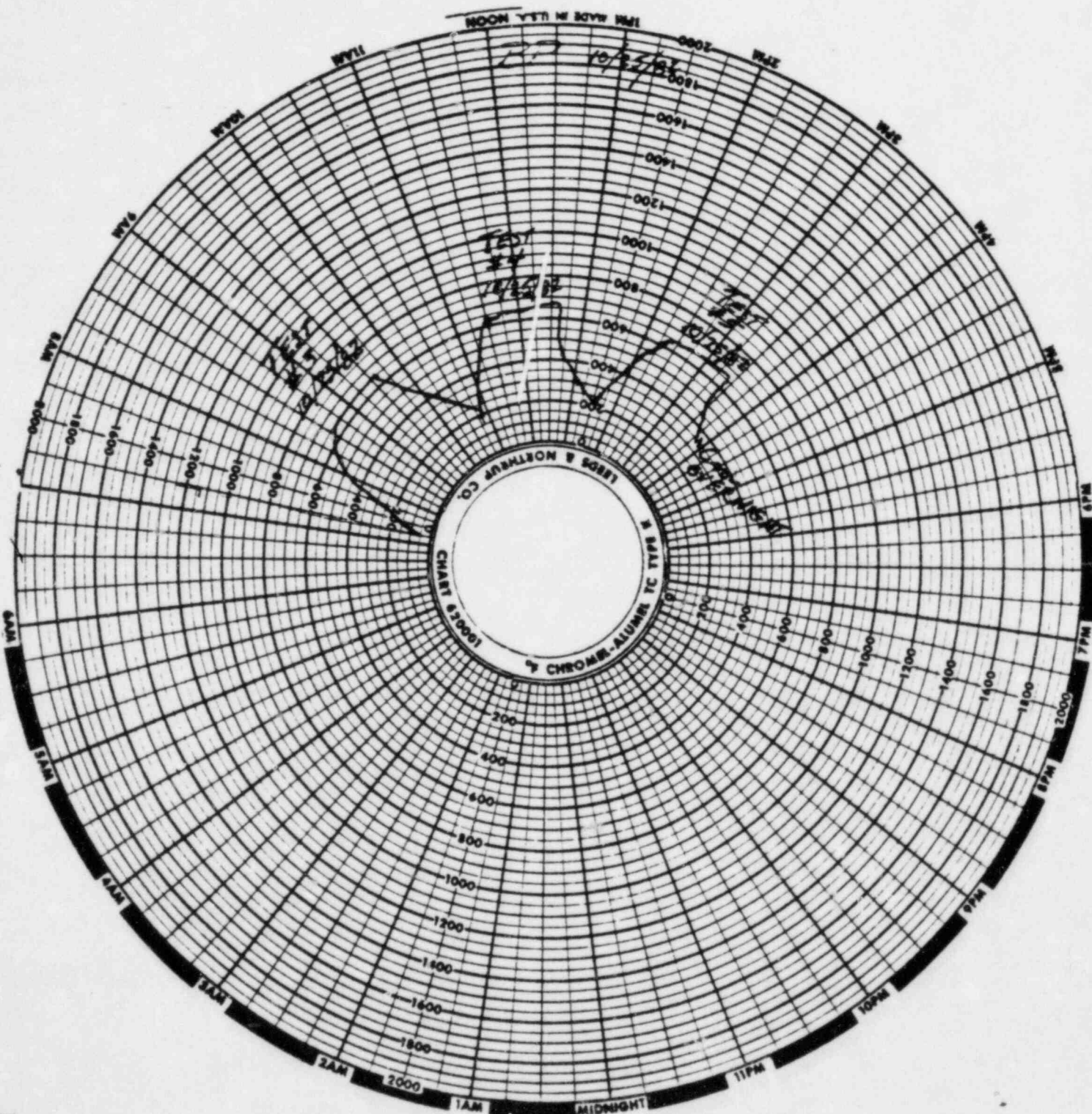
CUSTOMER:

SUPPORT I.D.

PROJECT: WPSS

OTHER I.D. PE-452

REF. PAGE

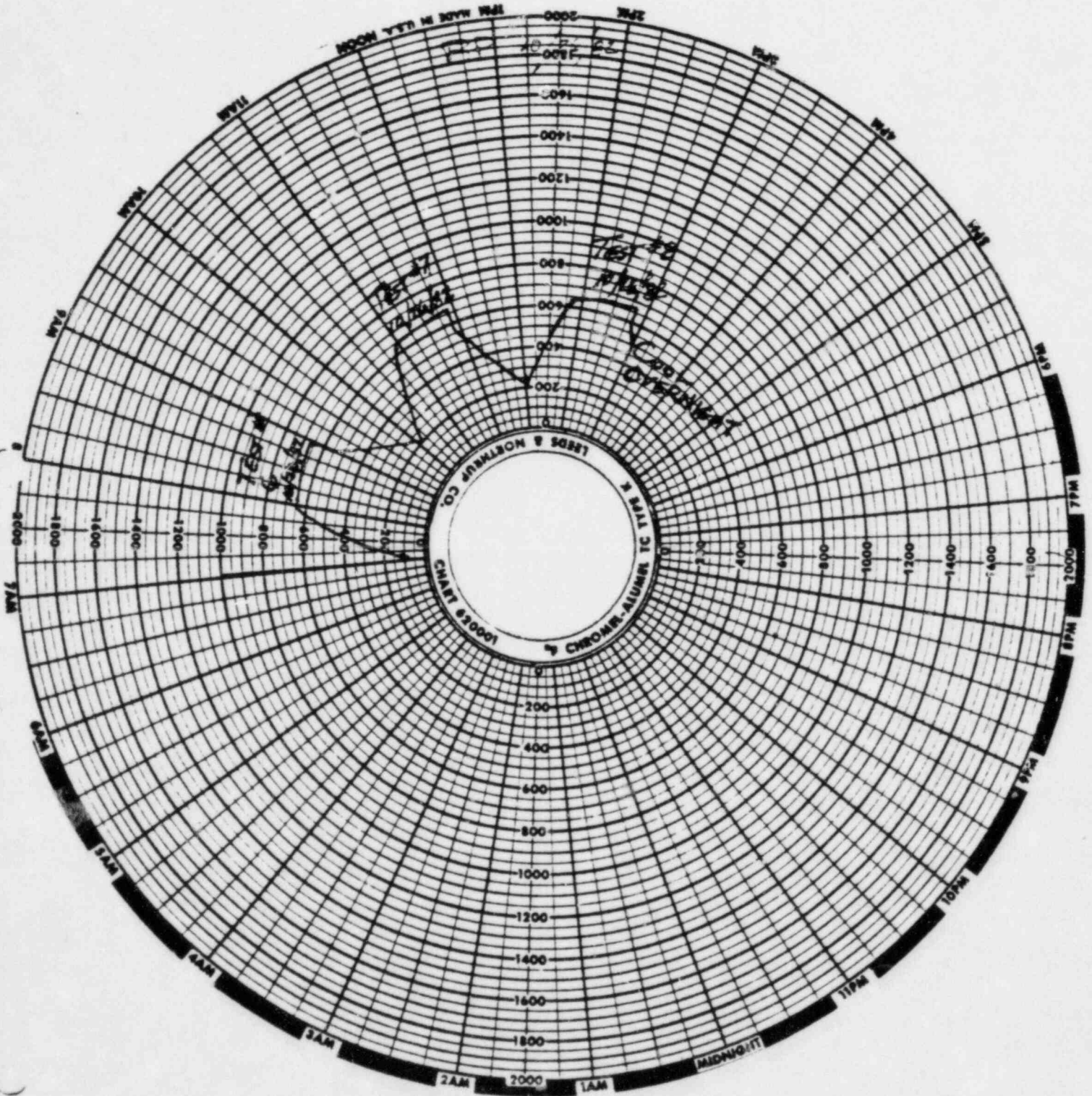


BY BP DATE 10/26/82
CHKD. BY WMP DATE 10/28/82

SUBJECT FIG. 215 OVEN CHART
CUSTOMER _____
PROJECT WPSS

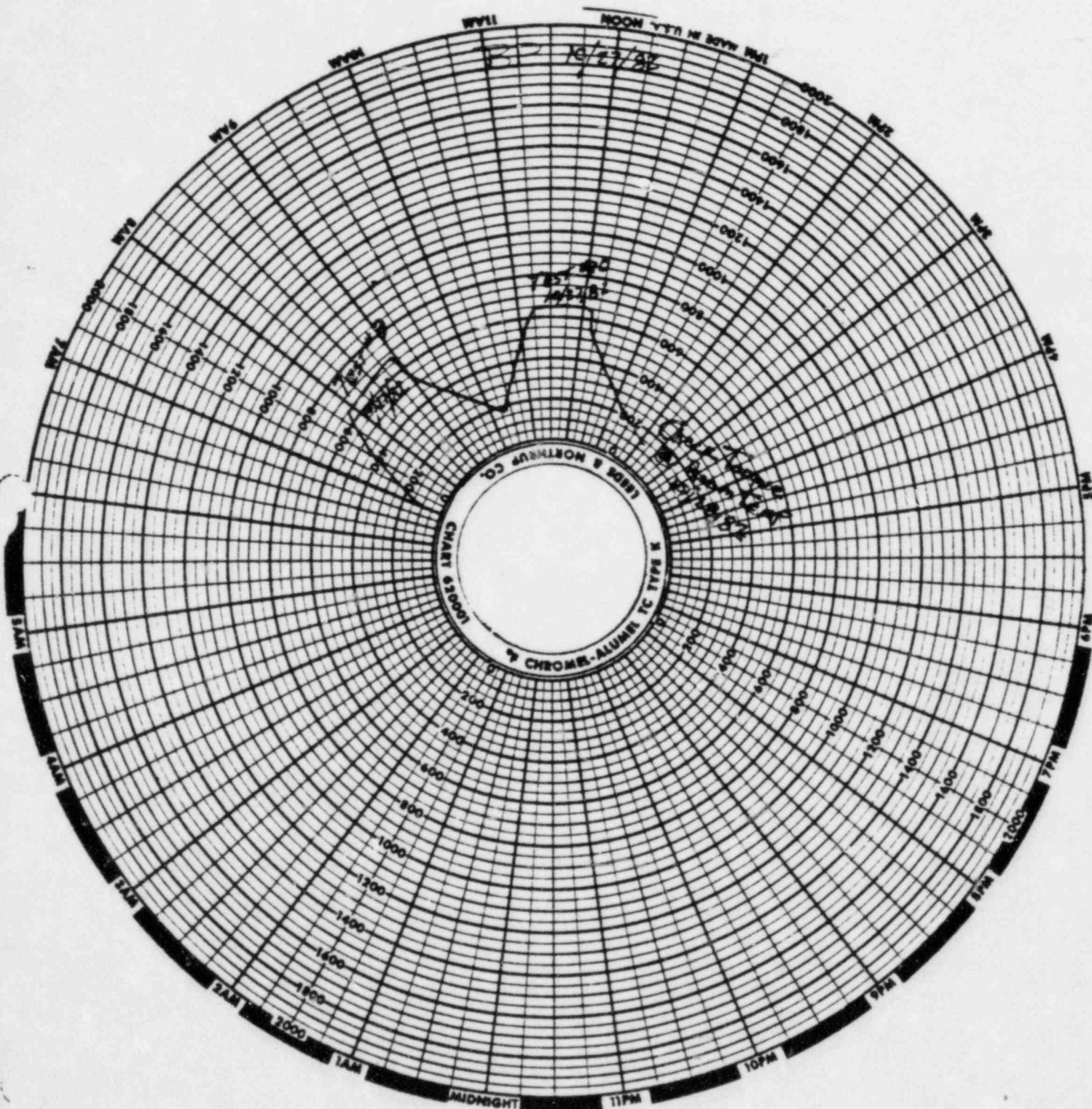
SHEET NO. 4 OF 5
SUPPORT I.D. _____
OTHER I.D. PE-452

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BY BP DATE 10/27/82 SUBJECT FIG 215 OPEN-CHART SHEET NO. 5 OF 5
 CHKD. BY WMP DATE 11/28/82 CUSTOMER _____ SUPPORT I.D. _____
 PROJECT WPSS OTHER I.D. PE-452

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No TORQUE LOSS