

ACCELERATED DISTRIBUTION DEMONSTRATION SYSTEM

REGULATORY INFORMATION DISTRIBUTION SYSTEM (RIDS)

ACCESSION NBR: 9203230009 DOC. DATE: 92/03/23 NOTARIZED: NO DOCKET # 05000400
 FACIL: 50-400 Shearon Harris Nuclear Power Plant, Unit 1, Carolina
 AUTH. NAME AUTHOR AFFILIATION
 * Carolina Power & Light Co.
 RECIP. NAME RECIPIENT AFFILIATION

SUBJECT: Initial Part 21 rept re defect in Anchor Darling supplied main feedwater preheater bypass isolation valves. On 920112, all non-Q components replaced w/suitable components & tested satisfactorily. Next rept will be submitted by 920214.

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 TITLE: Part 21 Rept (50 DKT)

NOTES: Application for permit renewal filed. 05000400

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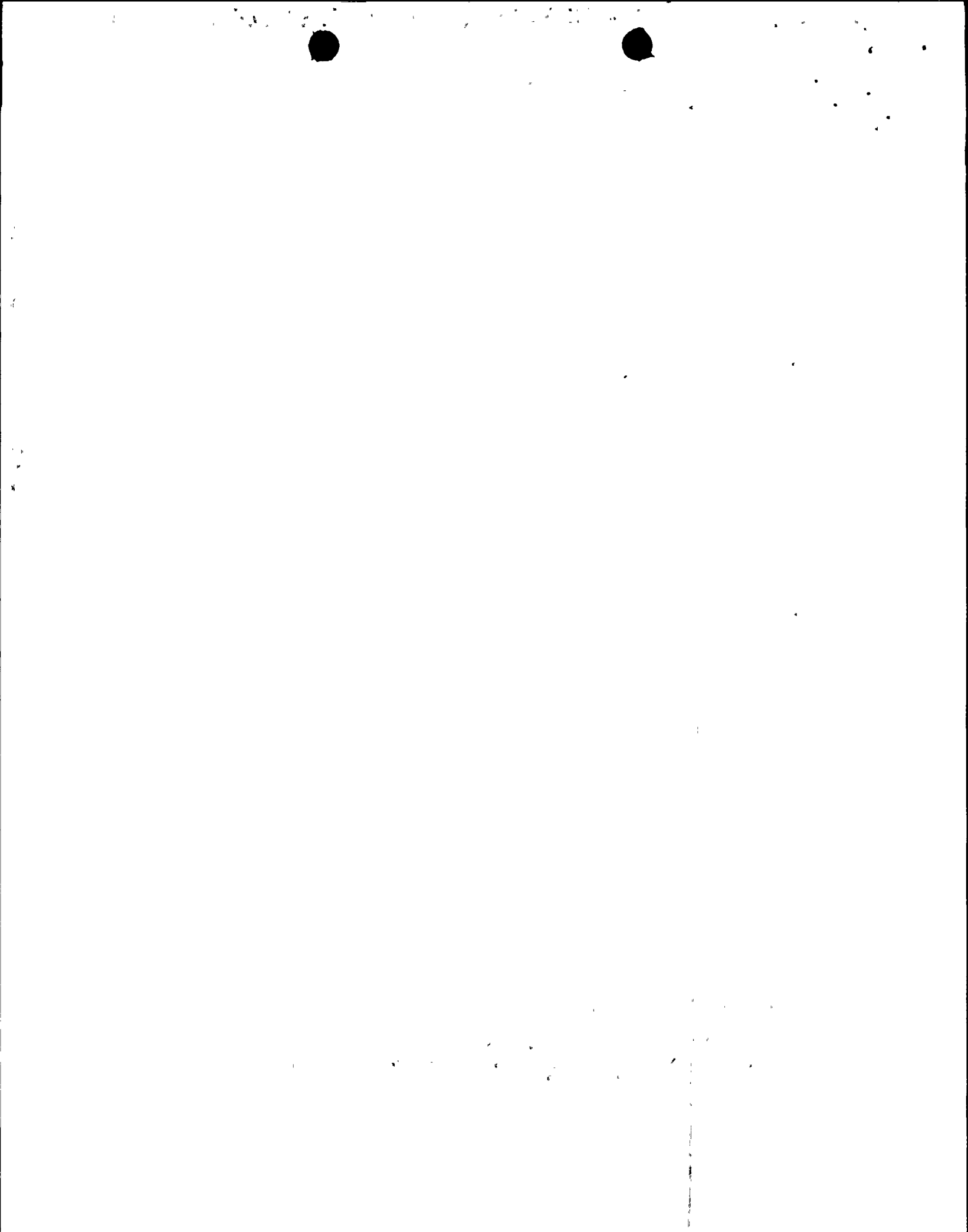
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SUBJECT: 10CFR21 INITIAL NOTIFICATION
SHEARON HARRIS NUCLEAR POWER PLANT

ITEM: DEFICIENCY IN THE ACTUATOR TO THE MAIN FEEDWATER
PREHEATER BYPASS ISOLATION VALVES.

Plant Identification numbers:

2AF-V156 SAB-1

2AF-V157 SAB-1

2AF-V158 SAB-1

The Harris Plant (3 loop Westinghouse NSSS) has model D-4 steam generators (SGs). These SGs have a split feed arrangement where at 100% full power, approximately 82% of the needed SG feed flow is directed to the SG preheater section located immediately above the SG tube sheet, and the remaining 18% is directed to the SG upper U-tube region via the same line used for auxiliary feedwater (AFW) flow. The containment isolation valve for the 18% feed flow path is the Main Feedwater Preheater Bypass Isolation Valve.

SUPPLIED BY: ANCHOR DARLING SUPPLIED VALVE AND ACTUATOR PACKAGE

HILLER ACTUATOR MODEL # 12 SA-A029

NATURE OF DEFICIENCY: (See attached drawing)

The valve and actuator for the 3 Main Feedwater Preheater Bypass Isolation Valves were specified, purchased, and installed for a Q Class application. During review of a proposed plant modification, it was determined that several actuator components were in fact non-Q.

A potential failure mechanism existed where the failure of a non-Q component could result in the inability of a Q-class component to perform as designed. Specifically, a postulated failure of the air pump (#6 in drawing), could cause a situation where normal leakage of the accumulator (item 1) from its normal 150 psig pressure would go undetected by redundant pressure switches (PS A and B). These switches provide the valves an auto close signal when pressure drops to 66 psig in the input air header.

The valves are containment isolation valves and are required to close within 10 seconds of a feedwater isolation signal. If accumulator pressure drops from its normal 150 psig to below 122 psig, it may not close within the required time. If accumulator pressure drops to approximately 20 psig, there may not be sufficient force to reposition the valve and maintain it closed against maximum differential pressure.

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REPORTING BASIS: This design deficiency could have compromised the containment boundary's capability to prevent or mitigate the consequences of accidents resulting in offsite exposures.

IMMEDIATE CORRECTIVE ACTION: Upon discovery of this condition on January 7, 1992 a two hour surveillance interval was commenced to verify the actuators' components were functioning properly and the accumulators were fully pressurized. On January 12, 1992, all non-Q components were replaced with suitable components and tested satisfactorily. Following this the two hour surveillance interval was suspended. An engineering review was in progress during this time to determine the 10CFR21 reportability. On January 15, 1992 the Harris Plant Nuclear Safety Committee determined a 10CFR21 report was appropriate.

FOLLOWUP ACTION: A written report will be submitted by February 14, 1992.

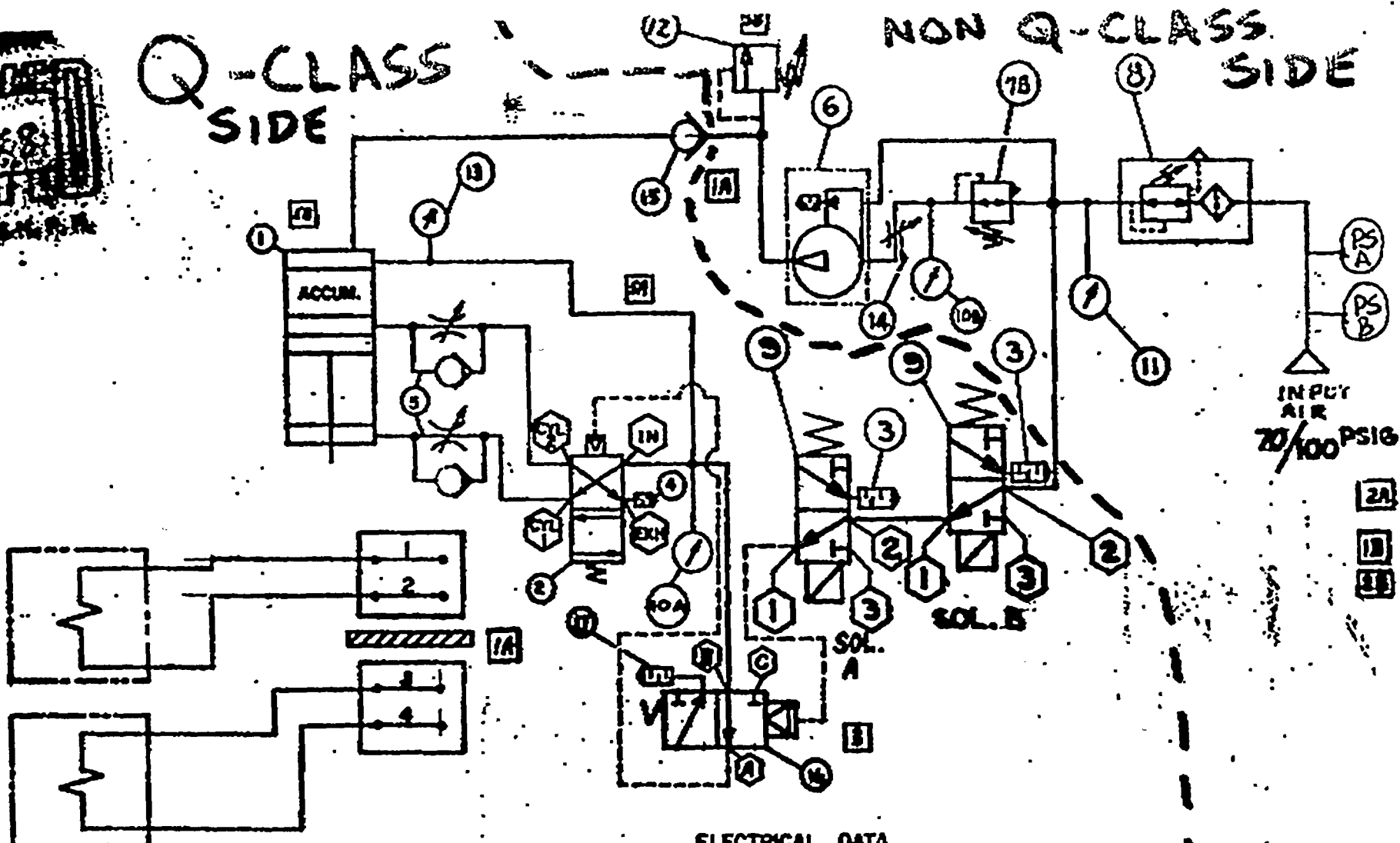
REFERENCE: IE Information Notice No. 82-25:
Failures of Hiller Actuators Upon Gradual Loss of Air Pressure.

POINT OF CONTACT: Chuck Olexik, Manager - Regulatory Compliance,
Harris Plant 919-362-2718.

JAN-16-92 THU 15:30

Q-CLASS SIDE

NON Q-CLASS SIDE



ITEM	DESC
1	BASH WITH
2	1/2" NORGI
3	1/4" MO
4	1/2" QUIET
5	1/2" F REPU
6	AIR HAS
7B	1/2" A NORGI
8	1/4" F CONK
9	1/4" ASCO 125 VI
10A & 10B	0-160. ITEM ITEM
11	0-160 NORGI
12	1/2" RE NORGI
13	1/2" MANS
14	1/2" NI MANA
15	1/2" CHEK KEPNE
16	1/2" F-A
17	1/4" EU

ELECTRICAL DATA
 1. SOLENOID VALVES -125 V.D.C.
 +12%, -18% VOLTAGE
 INTERMITTANT SERVICE

OPERATING DATA

- NORMAL OPERATING ADJUSTMENT (SET AT FACTORY)
- 1. FILTER/REG. (ITEM 8) 70 PSIG.
 - 2. AIR PUMP REG. (ITEM 7B) 20 PSIG.
 - 4. NEEDLE VALVE (ITEM 14) USED TO ADJUST PRESS

NOTES:
 1. AIR C IN ITS SOLEN
 2. IN STAM

SE	GAUGE READ 250 MMG 8-29-82
SD	WAS SET AT 260 PSIG 8-29-82
SC	WAS SET AT 260 PSIG 8-29-82

ITEM	DESCRIPTION
1	BASIC ACTUATOR - 12" BORE X 6 3/4" STROKE WITH ACCUMULATOR
2	1/2" - 4 WAY VALVE NORGREN VALVE MODEL NO. F003A
3	1/4" EXHAUST BREATHER MOSIER MODEL NO. EM-2
4	1/2" EXHAUST MUFFLER QUETAIRE MODEL BB-4
5	1/2" FLOW CONTROL VALVE REPUBLIC MODEL NO. M4113C-8928-6
6	AIR PUMP HASKEL MODEL NO. AAD-5
7B	1/2" AIR REGULATOR NORGREN MODEL NO. 11-002-061
8	1/2" FILTER-REGULATOR CONOFLON # CFH20XT178Z
9	1/2" - 3 WAY SOLENOID OPERATED VALVE ASCO MODEL NO. NP-8320ANSV 125 V.D.C. NORMALLY CLOSED
10A & 10B	0-160 PSIA GAUGE NORGREN # 18-013-206 ITEM 10A MTR. TO ITEM 7A. ITEM 10B MTR. TO ITEM 7B.
11	0-160 PSIG GAUGE - MTR. TO ITEM 8 NORGREN # 18-013-209
12	1/2" RELIEF VALVE - NORGREN # 16-001-035
13	0-300 PSIA GAUGE - MTR. TO ACCUM. HEAD MARSH # 2 1/2 - 1 DFM - 1/4 CBM-300
14	1/2" NEEDLE VALVE - MANATROL # N-800-8-10
15	1/2" CHECK VALVE KEPNER # 1582
16	1/2" S-BAY VALVE - NORGREN C000TF
17	1/4" EXH. BREATHER MOSIER # EM-6

NOTES:
 1. AIR CIRCUIT SHOWN WITH THE ACTUATOR IN ITS NORMAL POSITION (RETRACTED) SOLENOID (A) & (B) ENERGIZED.
 2. O INDICATES PORT DESIGNATION AS STAMPED ON VALVES.

IP:

RALPH A. HILLER COMPANY PITTSBURGH, PA 15234	
AIR CIRCUIT & WIRING DIAGRAM	
DATE: 10-2-80	SCALE: _____
BY: D.H. 10-23-80	APP: D.G. 10-24-80
12 SA-A029	SHEET REV. 1 OF 3