

DUKE POWER COMPANY

POWER BUILDING

422 SOUTH CHURCH STREET, CHARLOTTE, N. C. 28242

WILLIAM O. PARKER, JR.
VICE PRESIDENT
STEAM PRODUCTION

ber 30, 1979

TELEPHONE: AREA 704
373-4083

Mr. J. P. O'Reilly, Director
U.S. Nuclear Regulatory Commission
Region II
101 Marietta Street, Suite 3100
Atlanta, GA 30303

Re: McGuire Nuclear Station
Units 1 and 2
Docket Nos. 50-369 and 50-370
SD 369-370/79-06, Supplement 1

Dear Mr. O'Reilly:

My letter of August 31, 1979, transmitted Significant Deficiency Report SD 369-370/79-06 which described a problem with the personnel air lock door seals. In the original report we committed to provide further details on the corrective actions taken. This information is contained herein.

A meeting was held at McGuire Nuclear Station on August 20, 1979, between Duke Power Company and W. J. Woolley Company to discuss the deficiencies and corrective actions. Subsequent to this meeting, W. J. Woolley Company developed procedures for shop inspection and repair at Irwin Steel Fabricators in Canton, Ohio (Attachment #1). All of the personnel air lock door seal bolt holes were inspected for penetration depth, thread condition, thread depth, and perpendicularity.

All fully penetrating bolt holes and all bolt holes which deviate from the perpendicular by more than three degrees were plugged, drilled, and tapped as shown on W. J. Woolley drawing 36973 (Attachment #2). Similar drawings of all doors provide a record of repairs and existing bolt hold conditions.

Deficiencies related to thread condition and depth were repaired with threaded inserts. Attachment #3 shows a section of the threaded insert in place. These high strength inserts are installed after the holes have been re-tapped. The pullout resistance of the tapped hole is actually increased since the inserts allow greater shear area contact.

1504 020

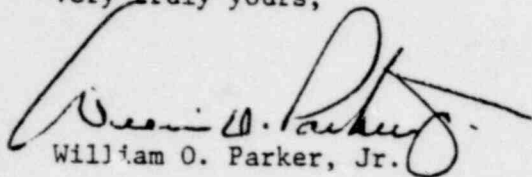


B019
SE
1/1
7912050 503

Mr. J. P. O'Reilly, Director
November 30, 1979
Page Two

These corrective actions for Unit 1 will be completed and the personnel air lock door seals reinstalled by January 31, 1980. The schedule for implementing these corrective actions on the Unit 2 personnel air lock door seals will be consistent with the startup activities for Unit 2.

Very truly yours,



William O. Parker, Jr.

THH/sch

Attachments

cc: Director
Office of Inspection and Enforcement
U.S. Nuclear Regulatory Commission
Washington, DC 20555

1504 021

McGUIRE AIR LOCK DOORS

SHOP INSPECTION PROCEDURE

REVISION 0, 10/10/79

1.0 SCOPE

This procedure is intended for use on Personnel Air Lock Doors for McGuire Nuclear Station Units 1 and 2.

2.0 PURPOSE

Inspection of drilled and tapped holes in door seal plates.

3.0 PROCEDURE

3.1 Identification

- 3.1.1 Each hole for each door has a unique identification as shown on drawings 36972 through 36979.
- 3.1.2 A map is included on each of the above drawings. It is to be completed with the appropriate measurements as evidence that each inspection stop has been completed.

3.2 Depth

- 3.2.1 Remove the inflatable seals and keeper bars.
- 3.2.2 A depth gauge with a 60° included angle pointed plunger shall be used.
- 3.2.3 The depth of each hole for the outer seal row A and the inner seal row A shall be measured and recorded on the map. Based on the thickness of the door plate and the depth of the hole, taking into account tolerances, those that are determined to be drilled through shall be rejected.

3.3 Thread Quality

- 3.3.1 A "Go - No Go" type thread gauge to measure a Class 3 threaded hole shall be used.
- 3.3.2 The threaded gauge shall be screwed into each hole. The "Go" portion should go in to a minimum depth of 1/2 inch. The "No-Go" portion should not be able to be screwed in. Those holes that do not meet the above criteria shall be rejected.
- 3.3.3 An attempt shall be made to correct rejected threads by running a tap into the hole. The thread gauge test procedure should then be repeated.

1504 022

W.J. Woolley Co.

McGUIRE AIR LOCK DOORS

SHOP INSPECTION PROCEDURE

REVISION 0, 10/10/79

3.0 PRECEDURE (continued)

3.4 Angularity

The angularity of each hole shall be determined with the thread gauge in the hole. The counter line of the hole shall be $90^\circ \pm 3^\circ$ with the surface of the plate or the tangent of the curve. The maximum angle should be recorded on the map. Those holes that are off by more than 3° shall be rejected.

3.5 Documentation

3.5.1 The map shall bear the signature of the inspector(s) and dates.

3.5.2 The sign-off may be performed for each measurement recorded, or performed in groups of measurements made by each inspector. If one inspector performed all the inspections only one signature and date is required.

3.6 Repair

Those holes which are rejected shall be repaired in accordance with drawings 36972 through 36979. The repairs shall be accomplished using approved welding procedures, and following the fabricators Quality Assurance Program.

1504 023

IRWIN STEEL FABRICATORS

Repair Procedure No. _____
 Rework Order No. N/A
 Reference S.O. No. 29553-N

Customer W. J. Woolley Company Date Issued 11-12-79
 Drawing Number _____ Number of Defective Parts 1 Door

Piece Mark or Assembly Name Inflatable Seal Air Lock Door

Description of Defect Improperly drilled holes for mounting Air Lock Seals in Personnel Air Locks at McGuire Nuclear Station.

Location of Defect

To be determined at acceptance inspection of holes (See Oper. No. 2).

Sketch if Necessary

POOR ORIGINAL

1504 024

REPAIR PROCEDURE

Op. No.	Operation Description	Supv. Date Init.	Insp. Date Init.
1.	Receive and inspect for damage that may have occurred during shipping, handling, etc. prior to receipt by ISF.		*
2.	Perform acceptance inspection as detailed below. Holes found to be unacceptable shall be circled with paintstick. Initial and date all inspections in the appropriate columns of the "Acceptance Inspection Report for McGuire Doors"		*
	A. Visual examine all holes. This examination is to detect stripped, crossed, or torn threads. Describe any defects on the "Acceptance Inspection Report for McGuire Doors" under the "Visual Thread Condition" Heading. If a thread is found to be defective, proceed to Operation No. 2D.		*

Rev No. _____ Date _____ By _____ Revision _____
 Eng. review: _____ Date: _____
 ANI/AI review: _____ Date: _____

PRELIMINARY

REPAIR PROCEDURE

(Continued from Sheet No1)

Repair Procedure No. _____

Rework Order No. N/A

Reference S.O. No. 29557-II

Oper. No.	Operation Description	Supv. Init.	Date	Insp. Init.	Date
	B. Measure the depth of outer seal Row "A" and inner seal Row "A" holes by using a pointed Vernier Dial Caliper depth gauge. Record the actual depth dimension on the "Acceptance Inspection Report for McGuire Doors" under the "Drilled Hole Depth" Heading. If a hole is found to be drilled thru proceed to operation No. 2D.				
	C. All threads shall be examined by using a "Go-No Go" type thread gauge.				
	(1) The "No-Go" portion should not be able to be screwed into the hole more than 4 turns. Record the results on the "Acceptance Inspection Report for McGuire Doors" under the "No-Go" gauge Heading by marking a "X" in the "No" column if the above criteria is not met. If a hole does not meet the above criteria proceed to Operation No. 2D.				
	(2) The "Go" portion should go into the hole a minimum depth of 1/2". If the above criteria is met, record the results on the "Acceptance Inspection Report for McGuire Doors" under the "Go Gauge" Heading by marking a "X" in the "Yes" column and under the "Tapped Thread Depth" Heading by marking (>1/2"). If the above criteria is not met, retap the hole by using a 1/2"-13 UNC Hand Tap and re-examine with a "Go-No Go" type thread gauge as follows:				
	(a) The "Go" portion should go into the hole a minimum depth of 1/2". Record the results on the "Acceptance Inspection Report for McGuire Doors" by marking a "X" in the "Yes" column under the "GO Gauge" Heading and by marking				

Rev No	Date	By	Revision	Rev No	Date	By	Revision

☐ Production Control
 ☐ Shop Office
 ☐ A. I.
 ☐ Inspection
 ☐ Weld Floor

(When Applicable)

PRELIMINARY

POOR ORIGINAL

REPAIR PROCEDURE
(Continued from Sheet No 2)

Repair Procedure No. _____

Rework Order No. N/A

Reference S.O. No. 29553-N

Oper. No.	Operation Description	Supv. Init.	Date	Insp. Init.	Date
	(> 1/2") under the "Tapped Thread Depth" heading if the above criteria is not met or by marking a "X" in the "No" column under the "Go Gauge" Heading if the above criteria is not met proceed to Operation No. 2D.				
	(b) The "No Go" portion should not be able to be screwed into the hole more than 4 turns. If the above criteria is not met, change the "Acceptance Inspection Record for McGuire Doors" by removing the "X" in the "No" column under the "No-Go Gauge" Heading and marking a "X" in the "Yes" column under the "No Go Gauge" Heading.				
	D. Measure the thread angle of each hole by screwing the "Go-No Go" Gauge into the hole and determining the thread angle by using a protractor. Record the actual measurement in degrees on the "Acceptance Inspection Report for McGuire Doors" under the "Thread Angle Heading."				
	E. Responsible Engineering & QA Personnel are to evaluate all Inspection Data and determine if repair is required, method of repair, and any remarks that may be required. Responsible Personnel will mark the above information on the "Acceptance Inspection Report for McGuire Doors" under the appropriate Headings.				
3.	All holes which will be plugged are to be drilled 1" Dia. thru by using a "Rotobroach"; thus removing the existing improperly drilled hole.				

Rev No	Date	By	Revision	Rev No	Date	By	Revision

REPAIR PROCEDURE
(Continued from Sheet No 3)

Repair Procedure No. _____
Rework Order No. N/A
Reference S.O. No. 29553-N

Oper. No.	Operation Description	Supv. Init.	Date	Insp. Init.	Date
4.	All holes which will be repaired by using a thread insert are to be drilled 17/32" Dia. x 13/16" Deep and Tapped 11/16" Deep by using a special Tap.				
5.	Screw threaded inserts into required hole and set.				
6.	From 1 1/4" Dia. Round Bar (SA-350-LF2) purchased on ISF P.O. # M8694, prepare required quantities of piece #1 and piece #2 Per Drawing.				
7.	Use Xylene Solvent to sufficiently clean all holes drilled in Oper. #3.				
8.	Fit and weld piece #1 and piece #2 into the appropriate holes in accordance with W.P. #126 including Addenda using Qualified Welders and Certified E-7018 Electrode.				
9.	Grind all welds flush.				
10.	Clean welds made in Operation No. 8 sufficiently for Liquid Penetrant Examination.				
11.	Liquid Penetrant inspect welds made in Operation No. 8 in accordance with ISF Procedure NDE-ME-PT1 including Addenda. P.T. Report Required. P.T. Report No. _____ (HSB and Duke Power Personnel to review all Reports and to sample Witness some P.T. Inspections on the entire contract). H.S.B. Review _____ Duke Power Review _____				

No	Date	By	Revision	Rev No	Date	By	Revision

☐ Production Control
 ☐ Shop Office
 ☐ A. I.
 ☐ Inspection
 ☐ Weld Floor
 (When Applicable)

1504 027

Sheet 4 of 5

PRELIMINARY
 POOR ORIGINAL

(Continued from Sheet No 4)

Rework Order No. N/A

Reference S.O. No. 29553-N

Oper. No.	Operation Description	Supv. Init.	Date	Insp. Da Init.
12.	All clamp bars to be redrilled 5/8" Dia. thru and recounter-sunk for proper head depth.			
13.	Assemble clamp bars to assure plugged holes are properly located.			*
14.	Perform Acceptance Inspection of all repaired holes per "Repair Inspection Report for McGuire Doors"			*
15.	Complete "Manufacturer's Report of Welded Repairs or Alterations" H.S.B. _____			
16.	Review all final documentation. H.S.B. Review _____ Duke Power Review _____			*
17.	Prepare for shipping.			
18.	Ship.			

PRELIMINARY

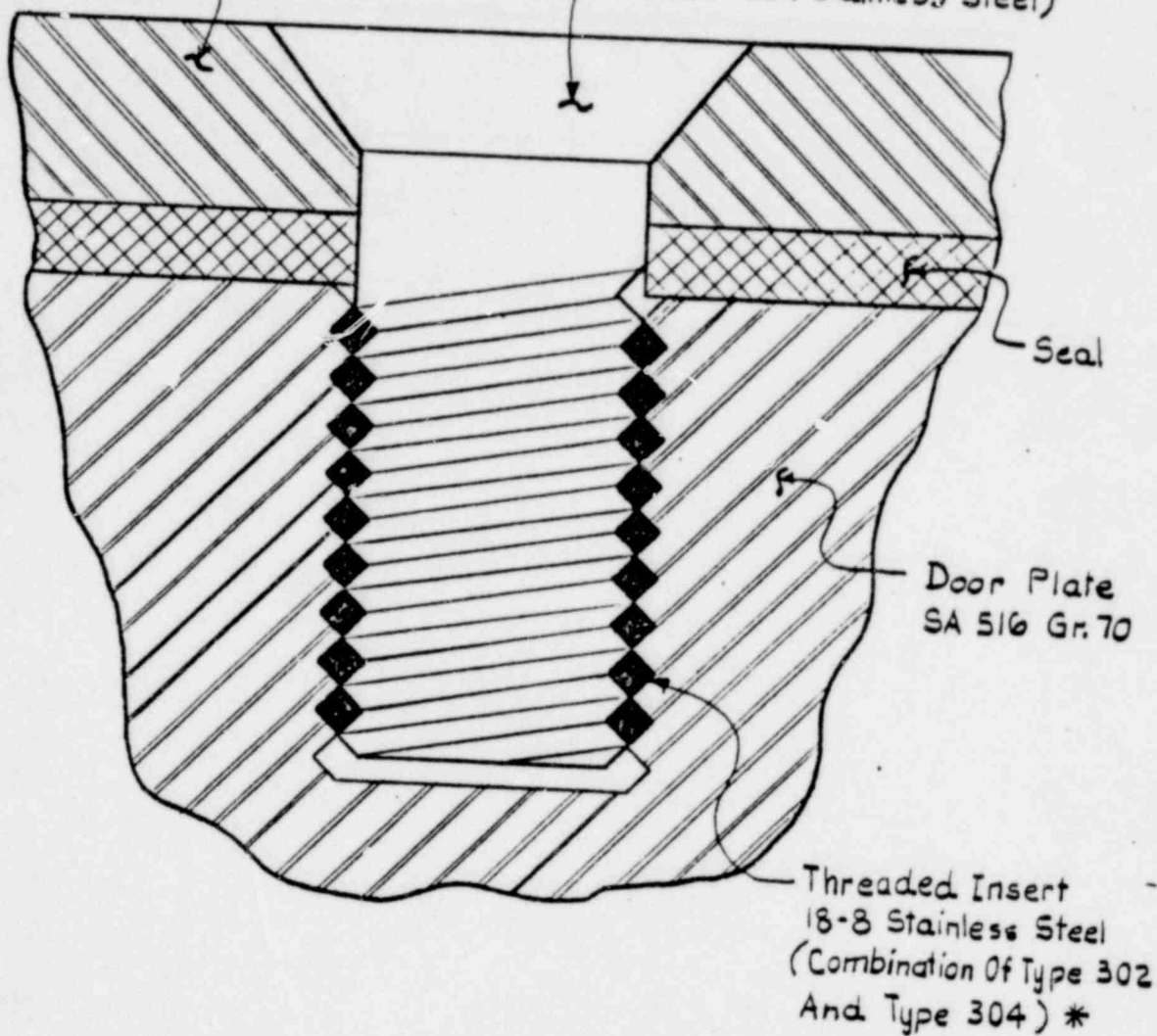
Rev No	Date	By	Revision	Rev No	Date	By	Revision
							POOR ORIGINAL

☐ Production Control ☐ Shop Office ☐ A. I. ☐ Inspection ☐ Weld Floor
(When Applicable)

POOR ORIGINAL

Clamp Bar
SA 516 Gr.70

$\frac{1}{2}$ " Φ Bolt - 13 UNC Thread
(SA-304 Stainless Steel)



* Cold Rolled Wire - Ultimate Tensile Strength 200-250 Ksi.

SKETCH 2:

Threaded Insert Assembly

1504 029