

# REGULATORY INFORMATION DISTRIBUTION SYSTEM (RIDS)

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50-269 Oconee Nuclear Station, Unit 1, Duke Power Co.			05000269
50-270 Oconee Nuclear Station, Unit 2, Duke Power Co.			05000270
50-287 Oconee Nuclear Station, Unit 3, Duke Power Co.			05000287
50-369 William B. McGuire Nuclear Station, Unit 1, Duke Powe			05000369
50-370 William B. McGuire Nuclear Station, Unit 2, Duke Powe			05000370
50-413 Catawba Nuclear Station, Unit 1, Duke Power Co.			05000413
50-414 Catawba Nuclear Station, Unit 2, Duke Power Co.			05000414

AUTH. NAME	AUTHOR AFFILIATION
TUCKER, H. B.	Duke Power Co.
RECIP. NAME	RECIPIENT AFFILIATION
GRACE, J. N.	Region 2, Ofc of the Director

SUBJECT: Forwards Rev 1 to Suppl 1 of response to NRC Compliance Bulletin 87-02, including results of charpy impact tests & new data sheets providing corrections & additions to document as originally submitted.

DISTRIBUTION CODE: IE11D COPIES RECEIVED: LTR 1 ENCL 1 SIZE: 40  
 TITLE: Bulletin Response (50 DKT)

NOTES: AEOD/Ornstein: 1cy.	05000269
AEOD/Ornstein: 1cy.	05000270
AEOD/Ornstein: 1cy.	05000287
LPDR 2cys AMDTS to FSAR. ASLB 1cy.	05000413
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INTERNAL:		AEOD/DOA	1				1			AEOD/DSP	1				1
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		NRR/DRER/EPB10D	1				1			NRR/PMAS/ILRB12	1				1
		<u>REG FILE</u> 02	1				1			RES/DE/EIB	1				1
		RG2 FILE 01	1				1								
EXTERNAL:		LPDR	3				3			NRC PDR	1				1
		NSIC	1				1								

NOTES: 4 4

**DUKE POWER COMPANY**  
P.O. BOX 33189  
CHARLOTTE, N.C. 28242

HAL B. TUCKER  
VICE PRESIDENT  
NUCLEAR PRODUCTION

TELEPHONE  
(704) 373-4531

February 29, 1988

Dr. J. Nelson Grace, Regional Administrator  
U.S. Nuclear Regulatory Commission - Region II  
101 Marietta, Street, NW - Suite 2900  
Atlanta, GA 30323

Subject: Duke Power Company  
Oconee Nuclear Station  
Docket Nos. 50-269, -270, -287  
McGuire Nuclear Station  
Docket Nos. 50-369, -370  
Catawba Nuclear Station  
Docket Nos. 50-413, -414

Response to NRC Compliance  
Bulletin No. 87-02

Dear Dr. Grace:

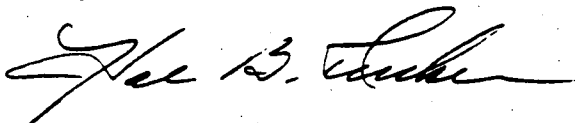
Supplement 1 to the Duke Power Response to NRC Compliance Bulletin No. 87-02 was submitted as an attachment to my letter dated February 11, 1988. Attached please find Revision 1 to this document.

Included in Revision 1 are the results of the Charpy Impact Tests that were outstanding at the time of my February 11, 1988 letter and new data sheets which provide corrections and additions to the document as originally submitted. These items are detailed on the Revision 1 instruction sheet attached to this letter.

Revision 1 should be inserted in accordance with the attached instruction sheet.

I declare under penalty of perjury that the statements set forth herein are true and correct to the best of my knowledge.

Very truly yours,



Hal B. Tucker

JSW/188/jgc

Attachment

8803080263 880229  
PDR ADOCK 05000269  
PDR

IE11

1/1

Dr. J. Nelson Grace  
February 29, 1988  
Page 2

Original Letter and Copy of Attachments:

U.S. Nuclear Regulatory Commission  
Document Control Desk  
Washington, D.C. 20555

xc: w/attachments:

NRC Resident Inspector  
McGuire Nuclear Station

NRC Resident Inspector  
Oconee Nuclear Station

NRC Resident Inspector  
Catawba Nuclear Station

DUKE POWER COMPANY  
RESPONSE TO  
NRC COMPLIANCE BULLETIN 87-02  
SUPPLEMENT 1 (February 11, 1988)

REVISION 1

Instructions

<u>REMOVE</u>	<u>INSERT</u>	<u>DESCRIPTION OF CORRECTION</u>
Page ONS-2	Page ONS-2, Rev. 1	Inclusion of Nickel (% wt.) - Attachment 2
Page ONS-4	Page ONS-4, Rev. 1	Inclusion of Nickel (% wt.) - Attachment 2
Page ONS-10	Page ONS-10, Rev. 1	Changed to Indicate Sample "B" Used for Mechanical Testing - Attachment 2
Page ONS-12	Page ONS-12, Rev. 1	Added Charpy Impact Test Results - Attachment 2
Page ONS-13	Page ONS-13, Rev. 1	Corrected Inverted Letters on Head Marking Drawing - Attachment 1
Page ONS-15	Page ONS-15, Rev. 1	Corrected Head Marking Drawing; Typographical Error on Class/Procurement Level (QA Condition I should be QA Condition 1) - Attachment 1
Page ONS-16	Page ONS-16, Rev. 1	Added Charpy Impact Test Results; Inclusion of Vanadium (% wt.) - Attachment 2
Page ONS-18	Page ONS-18, Rev. 1	Added Charpy Impact Test Results; Added (compared to SA193 GR. B7) in Chemical Analysis (% wt.) Space - Attachment 2
Page ONS-23	Page ONS-23, Rev. 1	Corrected Inverted Numerals on Head Marking Drawing - Attachment 1
Page ONS-31	Page ONS-31, Rev. 1	Changed Bolt Head Drawing From Hex to Square - Attachment 1
Page ONS-39	Page ONS-39, Rev. 1	Changed Capscrew Head Drawing From Hex to Round - Attachment 1
Page ONS-41	Page ONS-41, Rev. 1	Added Duke Power Specification No. to Fastener Description - Attachment 1
Page ONS-47	Page ONS-47, Rev. 1	Corrected Error in Fastener Description and Material Specification (GR. B8M should be GR. 8M) - Attachment 1

# Instructions (Continued)

<u>REMOVE</u>	<u>INSERT</u>	<u>DESCRIPTION OF CORRECTION</u>
Page ONS-48	Page ONS-48, Rev. 1	Same as above in Chemical Analysis (% wt.) Space - Attachment 2
Page ONS-49	Page ONS-49, Rev. 1	Changed NQ to QA in Sample ID#; Corrected Typographical Error in Fastener Description - Attachment 1
Page ONS-50	Page ONS-50, Rev. 1	Corrected the Inversion of Hardness and Chemical Test Results with Sample ONS/NQ/NUT/35 (also see page ONS-70); Corrected Error in Chemical Analysis (% wt.) Space (GR. 8M should be GR. 8) - Attachment 2
Page ONS-59	Page ONS-59, Rev. 1	Reorientation of Head Marking Letters - Attachment 1
Page ONS-62	Page ONS-62, Rev. 1	Corrected Error in Chemical Analysis (% wt.) Space (307 should be 563); Inclusion of Carbon (% wt.); Deletion of Sulfur (% wt.) - Attachment 2
Page ONS-68	Page ONS-68, Rev. 1	Corrected Typographical Error in Hardness Space (Added Parenthesis); Added Charpy Impact Test Not Required (Nonsafety Related Sample); Added (Compared to Al94 GR. 2H) to Chemical Analysis (% wt.) Space; Added (-0.03% tolerance per A29) to Carbon Chemical Analysis (% wt.) Space - Attachment 2
Page ONS-70	Page ONS-70, Rev. 1	Corrected the Inversion of Hardness and Chemical Test Results with Sample ONS/QA/NUT/25 (Also see Page ONS-50); Corrected Error in Chemical Analysis (% wt.) Space (GR. 8 should be GR. 8M) - Attachment 2
Page ONS-72	Page ONS-72, Rev. 1	Same as Page ONS-62
Page MNS-52	Page MNS-52, Rev. 1	Addition of Asterisk to Hardness Test Result Space Indicating this Property Was Found Out of Spec. - Attachment 2
Page MNS-55	Page MNS-55, Rev. 1	Corrected Head Marking on Sample "B" - Attachment 1
Page MNS-71	Page MNS-71, Rev. 1	Reorientation of Head Marking Letters - Attachment 1

# Instructions (Continued)

<u>REMOVE</u>	<u>INSERT</u>	<u>DESCRIPTION OF CORRECTION</u>
Page CNS-11	Page CNS-11, Rev. 1	Corrected Bolt Diameter and Length in Fastener Description - Attachment 1
Page CNS-12	Page CNS-12, Rev. 1	Noted that Charpy Impact Test Not Required (Sample less than or equal to 1" Diameter) - Attachment 2
Page CNS-19	Page CNS-19, Rev. 1	Corrected Stud Length in Fastener Description - Attachment 1
Page CNS-23	Page CNS-23, Rev. 1	Corrected Error in Head Marking Specification (GR. 2 should be GR. 5) - Attachment 1
Page CNS-24	Page CNS-24, Rev. 1	Corrected Error in Chemical Analysis (% wt.) Space (6 should be 5) - Attachment 2
Page CNS-41	Page CNS-41, Rev. 1	Corrected Typographical Error in Fastener Description (") - Attachment 1
Page CNS-47	Page CNS-47, Rev. 1	Corrected Typographical Error in Fastener Description (") - Attachment 1
Page CNS-49	Page CNS-49, Rev. 1	Added Vendor Name and Part Number to Fastener Description - Attachment 1
Page CNS-53	Page CNS-53, Rev. 1	Corrected Typographical Error in Fastener Description ("X" should be "-") - Attachment 1
Page CNS-55	Page CNS-55, Rev. 1	Same as Above (Page CNS-53)
Page CNS-72	Page CNS-72, Rev. 1	Added (Sample "A") to Hardness Space; Added "A" (Compared to SA194 GR. 2H) to Chemical Analysis (% wt.) Space - Attachment 2

DUKE POWER COMPANY RESPONSE TO  
NRC COMPLIANCE BULLETIN 87-02

Attachment 2

Test Data Summary

Sample ID# ONS/QA/BOLT/1

Hardness 85 HRB (Sample "B")

Ultimate Tensile Strength 84.4 Ksi (Sample "A")

0.2% Yield Strength 37.1 Ksi (Sample "A")

Charpy Impact \_\_\_\_\_

Chemical Analysis (% wt.) Sample "A" (Compared to SA193 GR.B8)

Iron _____	Titanium _____
Carbon <u>0.06</u>	Vanadium _____
Manganese <u>1.91</u>	Columbium + Tantalum _____
Phosphorus <u>0.026</u>	Copper _____
Sulfur <u>&lt;0.005</u>	Aluminum _____
Silicon <u>0.52</u>	Zinc _____
Chromium <u>18.35</u>	Tin _____
Nickel <u>9.23</u>	Boron _____
Molybdenum _____	Others _____

\*Properties found out of specification shall be noted with an Asterisk

Note: For each fastener description, two samples were obtained and arbitrarily labeled "A" and "B".

DUKE POWER COMPANY RESPONSE TO  
NRC COMPLIANCE BULLETIN 87-02

Attachment 2

Test Data Summary

Sample ID# ONS/QA/BOLT/2

Hardness 83 HRB (Sample "B")

Ultimate Tensile Strength 99.2 Ksi (Sample "A")

0.2% Yield Strength 30.8 Ksi (Sample "A")

Charpy Impact \_\_\_\_\_

Chemical Analysis (% wt.) Sample "A" (Compared to SA193 GR.B8)

Iron \_\_\_\_\_

Titanium \_\_\_\_\_

Carbon 0.05

Vanadium \_\_\_\_\_

Manganese 1.16

Columbium +  
Tantalum \_\_\_\_\_

Phosphorus 0.017

Copper \_\_\_\_\_

Sulfur <0.005

Aluminum \_\_\_\_\_

Silicon 0.58

Zinc \_\_\_\_\_

Chromium 18.52

Tin \_\_\_\_\_

Nickel 8.20

Boron \_\_\_\_\_

Molybdenum \_\_\_\_\_

Others \_\_\_\_\_

\*Properties found out of specification shall be noted with an  
Asterisk

Note: For each fastener description, two samples were obtained  
and arbitrarily labeled "A" and "B".



DUKE POWER COMPANY RESPONSE TO  
NRC COMPLIANCE BULLETIN 87-02

Attachment 2

Test Data Summary

Sample ID# ONS/QA/BOLT/5

Hardness \_\_\_\_\_

Ultimate Tensile Strength 139.1 Ksi (Sample "B")

0.2% Yield Strength 126.4 Ksi (Sample "B")

Charpy Impact \_\_\_\_\_

Chemical Analysis (% wt.) Sample "A" (Compared to A193 GR.B7)

Iron \_\_\_\_\_

Titanium \_\_\_\_\_

Carbon 0.39

Vanadium \_\_\_\_\_

Manganese 0.86

Columbium +  
Tantalum \_\_\_\_\_

Phosphorus 0.007

Copper \_\_\_\_\_

Sulfur 0.019

Aluminum \_\_\_\_\_

Silicon 0.21

Zinc \_\_\_\_\_

Chromium 0.91

Tin \_\_\_\_\_

Nickel \_\_\_\_\_

Boron \_\_\_\_\_

Molybdenum 0.20

Others \_\_\_\_\_

\*Properties found out of specification shall be noted with an  
Asterisk

Note: For each fastener description, two samples were obtained  
and arbitrarily labeled "A" and "B".



DUKE POWER COMPANY RESPONSE TO  
NRC COMPLIANCE BULLETIN 87-02

Attachment 1

Fastener Testing Data Sheet

1

Sample ID#: ONS/QA/STUD/7

Fastener Description: To Be Supplied In Accordance With Duke Spec.  
#OSC-0244.00-00-0001, Rev. 2, Duke CL. F.  
Stud, Load 3/4" Dia. x 10 UNCX6 1/2" Long  
2 9/16" Threaded Both Ends Carbon Steel  
SA193 GR.B7 Duke Class F For Use With  
ITT Grinnell Clamps Fig. 200/201 1 1/2" Cylinder  
Size, 3 1/2" Thru 36" Ect. (Item#2, PO# J51526)

Description of Sample Stock Location: Bin# 6-E-14-2

Material Specification as  
Documented by Licensee Records: SA193 GR.B7

Head Marking (Specification and Manufacturer):

DTP  
B7

Class/Procurement Level: Duke Power QA Condition 1,  
ANSI B31.1

General Plant Application  
(e.g., Pressure Boundary, Structural): Pressure Boundary

Vendor: ITT Grinnell

QA Requirements Imposed on Vendor: Approved Vendor, 10 CFR Part 21

Licensee Representative:

Signature: David E. Whitaker Date: February 11, 1988

1

ONS-Oconee Nuclear Station ONS-13  
MNS-McGuire Nuclear Station  
CNS-Catawba Nuclear Station

REV. 1  
(2/29/88)

DUKE POWER COMPANY RESPONSE TO  
NRC COMPLIANCE BULLETIN 87-02

Attachment 1

Fastener Testing Data Sheet

1

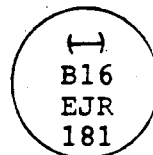
Sample ID#: ONS/QA/STUD/8

Fastener Description: Items 1 & 2 Ref. Spec. OSS-0018.00-00-0005 Rev.0.  
Item #1 Stud, Special Alloy Steel Chrome Moly  
ASME SA193 GR.16 ASME Section III, CL.II  
(Duke Class B). (Item #1, PO# N24188)

Description of Sample Stock Location: Bin# 3-A-1-5

Material Specification as  
Documented by Licensee Records: ASME SA193 GR.16

Head Marking (Specification and Manufacturer):



Class/Procurement Level:  
"ASME Section III CL.2, QA Condition 1" PO# N24188  
"ASME Section III CL.1, QA Condition 1"  
Spec OSS-0018.00-00-0005 Rev. 0.

General Plant Application  
(e.g., Pressure Boundary, Structural): Pressure Boundary

Vendor: Mackson Inc.  
Rock Hill, SC

QA Requirements Imposed on Vendor: Approved Vendor, 10 CFR Part 21

Licensee Representative:

Signature:

*David E. Whitaker*

Date:

February 11, 1988

1

ONS-Oconee Nuclear Station  
MNS-McGuire Nuclear Station  
CNS-Catawba Nuclear Station

ONS-15

REV. 1  
(2/29/88)

DUKE POWER COMPANY RESPONSE TO  
NRC COMPLIANCE BULLETIN 87-02

Attachment 2

Test Data Summary

Sample ID# ONS/QA/STUD/8

Hardness \_\_\_\_\_

Ultimate Tensile Strength 139.5 Ksi (Sample "A")

0.2% Yield Strength 128.8 Ksi (Sample "A")

Charpy Impact +40<sup>0</sup>F      79ft-lbs 51mils  
78ft-lbs 52mils (Sample "B")

Chemical Analysis (% wt.) Sample "A" (Compared to SA193 GR.B16)

Iron _____	Titanium _____
Carbon <u>0.41</u>	Vanadium <u>0.24</u>
Manganese <u>0.54</u>	Columbium + Tantalum _____
Phosphorus <u>0.008</u>	Copper _____
Sulfur <u>0.015</u>	Aluminum _____
Silicon <u>0.26</u>	Zinc _____
Chromium <u>0.93</u>	Tin _____
Nickel _____	Boron _____
Molybdenum <u>0.48</u>	Others _____

\*Properties found out of specification shall be noted with an Asterisk

Note: For each fastener description, two samples were obtained and arbitrarily labeled "A" and "B".

DUKE POWER COMPANY RESPONSE TO  
NRC COMPLIANCE BULLETIN 87-02

Attachment 2

Test Data Summary

Sample ID# ONS/QA/CAP/9

Hardness 31 HRC (Sample "B")

Ultimate Tensile Strength 139.2 Ksi (Sample "A")

0.2% Yield Strength 123.7 Ksi (Sample "A")

Charpy Impact +20°F 90ft-lbs 53mils  
91ft-lbs 55mils  
96ft-lbs 58mils (Sample "B")

Chemical Analysis (% wt.) Sample "A" (Compared To SA193Gr.B7)

Iron	<u>                    </u>	Titanium	<u>                    </u>
Carbon	<u>0.36</u>	Vanadium	<u>                    </u>
Manganese	<u>0.79</u>	Columbium + Tantalum	<u>                    </u>
Phosphorus	<u>0.009</u>	Copper	<u>                    </u>
Sulfur	<u>0.026</u>	Aluminum	<u>                    </u>
Silicon	<u>0.24</u>	Zinc	<u>                    </u>
Chromium	<u>0.85</u>	Tin	<u>                    </u>
Nickel	<u>                    </u>	Boron	<u>                    </u>
Molybdenum	<u>0.19</u>	Others	<u>                    </u>

\*Properties found out of specification shall be noted with an Asterisk

Note: For each fastener description, two samples were obtained and arbitrarily labeled "A" and "B".

DUKE POWER COMPANY RESPONSE TO  
NRC COMPLIANCE BULLETIN 87-02

Attachment 1

Fastener Testing Data Sheet

1

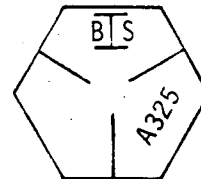
Sample ID#: ONS/NQ/BOLT/12

Fastener Description: Bolt, Machine Heavy Hex Head Medium Carbon Steel,  
Quenched and Tempered ASTM A325 Type 1 UNRC-2A  
Thread, Size 1/2" Dia. 13 Threads per Inch.  
2" Length. Additional Specification Require per  
Nuc. Station as Applicable. Item #1  
Rec. #7310 835834.001

Description of Sample Stock Location: Bin# 3-CC-14-4

Material Specification as  
Documented by Licensee Records: ASTM A325 Type 1

Head Marking (Specification and Manufacturer):



Class/Procurement Level: Duke Power QA Condition 1

General Plant Application  
(e.g., Pressure Boundary, Structural): Structural

Vendor: Transfer From Cherokee Nuclear Station

QA Requirements Imposed on Vendor: Procured, Received, Stored and  
Controlled in Accordance With The  
QA Procedures and Construction  
Procedures at Cherokee Nuclear  
Station

Licensee Representative:

Signature: David E. Whitaker Date: February 11, 1988

1

ONS-Oconee Nuclear Station  
MNS-McGuire Nuclear Station  
CNS-Catawba Nuclear Station

ONS-23

REV. 1  
(2/29/88)

DUKE POWER COMPANY RESPONSE TO  
NRC COMPLIANCE BULLETIN 87-02

Attachment 1

Fastener Testing Data Sheet

1

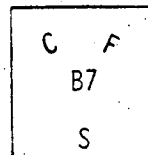
Sample ID#: ONS/NQ/BOLT/16

Fastener Description: Bolts, SA193 GR.B7. (MMIS ID# N205023453)  
Bolt, Shell Side Manway Cover  
1 1/4"-8x10 MSRH. (PCIE\*Description)

Description of Sample Stock Location: Bin# 2-M-2-2

Material Specification as  
Documented by Licensee Records: ---

Head Marking (Specification and Manufacturer):



Class/Procurement Level: Non-Safety Related

General Plant Application  
(e.g., Pressure Boundary, Structural): Pressure Boundary

Vendor: ---

QA Requirements Imposed on Vendor: ---

Licensee Representative:

Signature: David E. Whitaker Date: February 11, 1988

1

ONS-Oconee Nuclear Station  
MNS-McGuire Nuclear Station  
CNS-Catawba Nuclear Station

ONS-31

REV. 1  
(2/29/88)



DUKE POWER COMPANY RESPONSE TO  
NRC COMPLIANCE BULLETIN 87-02

Attachment 1

Fastener Testing Data Sheet

1

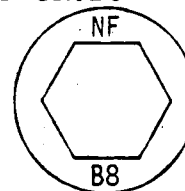
Sample ID#: ONS/NQ/CAP/20

Fastener Description: For Bingham Willamette Reactor Coolant Pump  
Shall Meet The Requirements of B&W Spec CS-3-36.  
Capscrew, SH 1"x3 1/4" No. 20 (Item #1, PO# N16471)

Description of Sample Stock Location: Bin# 3-A-2-1C

Material Specification as  
Documented by Licensee Records: Vendor Part No. 20, Head Markings  
Indicate ASME SA193 GR. B8

Head Marking (Specification and Manufacturer):



Class/Procurement Level: Duke Power QA Condition 1,  
B&W Spec. CS-3-36

General Plant Application  
(e.g., Pressure Boundary, Structural): Reactor Coolant Pump

Vendor: Bingham-International

QA Requirements Imposed on Vendor: Approved Vendor, 10 CFR Part 21

Licensee Representative:

Signature: David E. Whitaker Date: February 11, 1988

1

ONS-Oconee Nuclear Station  
MNS-McGuire Nuclear Station  
CNS-Catawba Nuclear Station

ONS-39

REV. 1  
(2/29/88)

DUKE POWER COMPANY RESPONSE TO  
NRC COMPLIANCE BULLETIN 87-02

Attachment 1

Fastener Testing Data Sheet

1

Sample ID#: ONS/OA/NUT/21

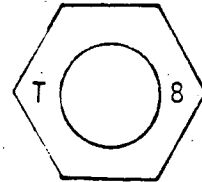
Shall be in accordance with Duke Power  
Specification OS-243.00-00-0005 Rev. 2

Fastener Description: Nut, Hex 3/8" Nominal-16 UNC Class 2B Fit  
Alloy Steel SA194 GR.8 Dimensional Standard  
ANSI B18.2.2 Duke Class B Safety Related.  
(Item #2, PO# M62911)

Description of Sample Stock Location: Bin# 3-DD-12-2

Material Specification as  
Documented by Licensee Records: ASME SA194 GR.8

Head Marking (Specification and Manufacturer):



Class/Procurement Level: Duke Power QA Condition 1,  
ASME Section III Class 2

General Plant Application  
(e.g., Pressure Boundary, Structural): Pressure Boundary

Vendor: Mackson Inc.  
Rock Hill, SC

QA Requirements Imposed on Vendor: Approved Vendor, 10 CFR Part 21

Licensee Representative:

Signature: David E. Whitaker Date: February 11, 1988

1

ONS-Oconee Nuclear Station  
MNS-McGuire Nuclear Station  
CNS-Catawba Nuclear Station

ONS-41

REV. 1  
(2/29/88)

DUKE POWER COMPANY RESPONSE TO  
NRC COMPLIANCE BULLETIN 87-02

Attachment 1

Fastener Testing Data Sheet

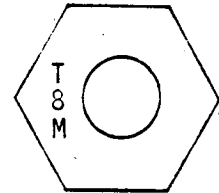
1 Sample ID#: ONS/QA/NUT/24

Fastener Description: Nut, Hexagon 316 Stainless Steel  
ASTM A194 GR. 8M 3/8-16

Description of Sample Stock Location: Bin# 3-G-1-1D

Material Specification as  
Documented by Licensee Records: ASTM A194 GR.8M

Head Marking (Specification and Manufacturer):



Class/Procurement Level: Duke Power QA Condition 1

General Plant Application  
(e.g., Pressure Boundary, Structural): Stock

Vendor: Thread Line

QA Requirements Imposed on Vendor: None

Licensee Representative:

Signature: C. D. Mueselmann Date: February 11, 1988

1

ONS-Oconee Nuclear Station  
MNS-McGuire Nuclear Station  
CNS-Catawba Nuclear Station

ONS-47

REV. 1  
(2/29/88)

DUKE POWER COMPANY RESPONSE TO  
NRC COMPLIANCE BULLETIN 87-02

Attachment 2

Test Data Summary

Sample ID# ONS/QA/NUT/24

Hardness 71 HRB (Sample "A")

Ultimate Tensile Strength \_\_\_\_\_

0.2% Yield Strength \_\_\_\_\_

Charpy Impact \_\_\_\_\_

Chemical Analysis (% wt.) Sample "A" (Compared to SA194 GR.8M)

Iron _____	Titanium _____
Carbon <u>0.02</u>	Vanadium _____
Manganese <u>1.40</u>	Columbium + Tantalum _____
Phosphorus <u>0.037</u>	Copper _____
Sulfur <u>&lt;0.005</u>	Aluminum _____
Silicon <u>0.67</u>	Zinc _____
Chromium <u>16.93</u>	Tin _____
Nickel <u>12.85</u>	Boron _____
Molybdenum <u>2.26</u>	Others _____

\*Properties found out of specification shall be noted with an Asterisk

Note: For each fastener description, two samples were obtained and arbitrarily labeled "A" and "B".

DUKE POWER COMPANY RESPONSE TO  
NRC COMPLIANCE BULLETIN 87-02

Attachment 1

Fastener Testing Data Sheet

1

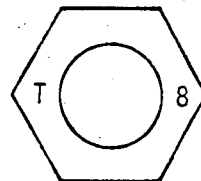
Sample ID#: ONS/QA/NUT/25

Fastener Description: Nut, Heavy Hexagon Stainless Steel,  
ASME SA194 GR.8, 3/4"-10

Description of Sample Stock Location: Bin# 6-D-6-1

Material Specification as  
Documented by Licensee Records: ASME SA 194 GR.8

Head Marking (Specification and Manufacturer):



Class/Procurement Level: Duke Power QA Condition 1,  
ASME Section III, Class 1

General Plant Application  
(e.g., Pressure Boundary, Structural): Pressure Boundary

Vendor: Mackson, Inc.  
Rock Hill, SC

QA Requirements Imposed on Vendor: 10 CFR Part 21

Licensee Representative:

Signature: C. D. Mendenhall Date: February 11, 1988

1

ONS-Oconee Nuclear Station  
MNS-McGuire Nuclear Station  
CNS-Catawba Nuclear Station

ONS-49

REV. 1  
(2/29/88)

DUKE POWER COMPANY RESPONSE TO  
NRC COMPLIANCE BULLETIN 87-02

Attachment 2

Test Data Summary

Sample ID# ONS/QA/NUT/25

Hardness 74 HRB (Sample "A")

Ultimate Tensile Strength \_\_\_\_\_

0.2% Yield Strength \_\_\_\_\_

Charpy Impact \_\_\_\_\_

Chemical Analysis (% wt.) Sample "A" (Compared to SA194 GR.8)

Iron _____	Titanium _____
Carbon <u>0.02</u>	Vanadium _____
Manganese <u>0.75</u>	Columbium + Tantalum _____
Phosphorus <u>0.024</u>	Copper _____
Sulfur <u>0.008</u>	Aluminum _____
Silicon <u>0.53</u>	Zinc _____
Chromium <u>19.00</u>	Tin _____
Nickel <u>9.55</u>	Boron _____
Molybdenum _____	Others _____

\*Properties found out of specification shall be noted with an Asterisk

Note: For each fastener description, two samples were obtained and arbitrarily labeled "A" and "B".

DUKE POWER COMPANY RESPONSE TO  
NRC COMPLIANCE BULLETIN 87-02

Attachment 1

Fastener Testing Data Sheet

1

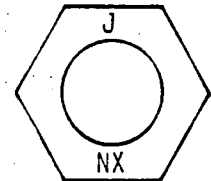
Sample ID#: ONS/QA/NUT/30

Fastener Description: Nut, Heavy Jam Carbon Steel A563 Grade A,  
2 3/4 X 4, ANSI B18.2.2, ASME Section III,  
Subsection NF, ASME Class 2

Description of Sample Stock Location: Bin# 3-DD-16-3

Material Specification as  
Documented by Licensee Records: ASTM A563 Grade A

Head Marking (Specification and Manufacturer):



Class/Procurement Level: ASME Section III, Subsection NF,  
ASME Class 2, QA Condition 1

General Plant Application  
(e.g., Pressure Boundary, Structural): Structural

Vendor: Catawba Transfer

QA Requirements Imposed on Vendor: Received, Stored, & Controlled in  
Accordance With The Applicable  
Quality Assurance Procedures

Licensee Representative:

Signature: C. D. Muenchen Date: February 11, 1988

1

ONS-Oconee Nuclear Station  
MNS-McGuire Nuclear Station  
CNS-Catawba Nuclear Station

ONS-59

REV. 1  
(2/29/88)

DUKE POWER COMPANY RESPONSE TO  
NRC COMPLIANCE BULLETIN 87-02

Attachment 2

Test Data Summary

Sample ID# ONS/NQ/NUT/31

Hardness 81 HRB (Sample "A")

Ultimate Tensile Strength \_\_\_\_\_

0.2% Yield Strength \_\_\_\_\_

Charpy Impact \_\_\_\_\_

Chemical Analysis (% wt.) Sample "A" (Compared to A563 GR.A)

Iron \_\_\_\_\_

Titanium \_\_\_\_\_

Carbon 0.28

Vanadium \_\_\_\_\_

Manganese \_\_\_\_\_

Columbium +  
Tantalum \_\_\_\_\_

Phosphorus 0.011

Copper \_\_\_\_\_

Sulfur \_\_\_\_\_

Aluminum \_\_\_\_\_

Silicon \_\_\_\_\_

Zinc \_\_\_\_\_

Chromium \_\_\_\_\_

Tin \_\_\_\_\_

Nickel \_\_\_\_\_

Boron \_\_\_\_\_

Molybdenum \_\_\_\_\_

Others \_\_\_\_\_

\*Properties found out of specification shall be noted with an  
Asterisk

Note: For each fastener description, two samples were obtained  
and arbitrarily labeled "A" and "B".



DUKE POWER COMPANY RESPONSE TO  
NRC COMPLIANCE BULLETIN 87-02

Attachment 2

Test Data Summary

Sample ID# ONS/NQ/NUT/34

Hardness 25 HRC (Sample "A")

Ultimate Tensile Strength ---

0.2% Yield Strength ---

Charpy Impact Not Required

Chemical Analysis (% wt.) Sample "A" (Compared to A194 GR. 2H)

Iron <u>                    </u>	Titanium <u>                    </u>
Carbon <u>0.37 (-0.03% tolerance per A29)</u>	Vanadium <u>                    </u>
Manganese <u>                    </u>	Columbium + Tantalum <u>                    </u>
Phosphorus <u>0.015</u>	Copper <u>                    </u>
Sulfur <u>0.006</u>	Aluminum <u>                    </u>
Silicon <u>                    </u>	Zinc <u>                    </u>
Chromium <u>                    </u>	Tin <u>                    </u>
Nickel <u>                    </u>	Boron <u>                    </u>
Molybdenum <u>                    </u>	Others <u>                    </u>

\*Properties found out of specification shall be noted with an Asterisk

Note: For each fastener description, two samples were obtained and arbitrarily labeled "A" and "B".

DUKE POWER COMPANY RESPONSE TO  
NRC COMPLIANCE BULLETIN 87-02

Attachment 2

Test Data Summary

Sample ID# ONS/NQ/NUT/35

Hardness 96 HRB (Sample "A")

Ultimate Tensile Strength \_\_\_\_\_

0.2% Yield Strength \_\_\_\_\_

Charpy Impact \_\_\_\_\_

Chemical Analysis (% wt.) Sample "A" (Compared to SA194GR.8M)

Iron _____	Titanium _____
Carbon <u>0.05</u>	Vanadium _____
Manganese <u>1.72</u>	Columbium + Tantalum _____
Phosphorus <u>0.031</u>	Copper _____
Sulfur <u>0.022</u>	Aluminum _____
Silicon <u>0.37</u>	Zinc _____
Chromium <u>16.64</u>	Tin _____
Nickel <u>10.20</u>	Boron _____
Molybdenum <u>2.05</u>	Others _____

\*Properties found out of specification shall be noted with an Asterisk

Note: For each fastener description, two samples were obtained and arbitrarily labeled "A" and "B".

DUKE POWER COMPANY RESPONSE TO  
NRC COMPLIANCE BULLETIN 87-02

Attachment 2

Test Data Summary

Sample ID# ONS/NQ/NUT/36

Hardness 97 HRB (Sample "A")

Ultimate Tensile Strength \_\_\_\_\_

0.2% Yield Strength \_\_\_\_\_

Charpy Impact \_\_\_\_\_

Chemical Analysis (% wt.) Sample "A" (Compared to A563 GR.A)

Iron _____	Titanium _____
Carbon <u>0.07</u>	Vanadium _____
Manganese _____	Columbium + Tantalum _____
Phosphorus <u>&lt; 0.005</u>	Copper _____
Sulfur _____	Aluminum _____
Silicon _____	Zinc _____
Chromium _____	Tin _____
Nickel _____	Boron _____
Molybdenum _____	Others _____

\*Properties found out of specification shall be noted with an Asterisk

Note: For each fastener description, two samples were obtained and arbitrarily labeled "A" and "B".

DUKE POWER COMPANY RESPONSE TO  
NRC COMPLIANCE BULLETIN 87-02

Attachment 2

Test Data Summary

Sample ID# MNS/QA/NUT/26

\*Hardness 33 HRC (Sample "A")

Ultimate Tensile Strength ---

0.2% Yield Strength ---

Charpy Impact ---

Chemical Analysis (% wt.) Sample (Sample "A") (Compared To A194 Gr. 8M)

Iron                     

Titanium                     

Carbon 0.05

Vanadium                     

Manganese 1.61

Columbium +  
Tantalum                     

Phosphorus 0.031

Copper 0.31

Sulfur <0.005

Aluminum                     

Silicon 0.62

Zinc                     

Chromium 16.13

Tin                     

Nickel 10.85

Boron                     

Molybdenum 2.31

Others                     

\*Properties found out of specification shall be noted with an Asterisk

Note: For each fastener description, two samples were obtained and arbitrarily labeled "A" and "B".

DUKE POWER COMPANY RESPONSE TO  
NRC COMPLIANCE BULLETIN 87-02

Attachment 1

Fastener Testing Data Sheet

1

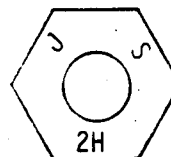
Sample ID#: MNS/QA/NUT/28

Fastener Description: Load Stud Nut For 35X6 Mech. Snubber.  
(Rec.#7320 840717) Nut, Hex Head, Carbon Steel,  
ASTM A307 GR., 1 1/2" X 8 UN, ANSI B18.2.2,  
Class 2A Fit (MMIS ID# 02641492N)  
PIR O-M87-0305 Was Written 12-15-87

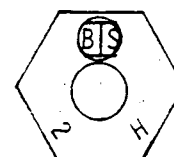
Description of Sample Stock Location: Bin# 03-EA-05-3

Material Specification as  
Documented by Licensee Records: None

Head Marking (Specification and Manufacturer):



(Sample "A")



(Sample "B")

Class/Procurement Level: See Problem Investigation  
Report (PIR) Serial No.O-M87-0305

General Plant Application  
(e.g., Pressure Boundary, Structural): Structural

Vendor: ---

QA Requirements Imposed on Vendor: ---

Licensee Representative:

Signature: David E. Whitaker Date: February 11, 1988

1

ONS-Oconee Nuclear Station  
MNS-McGuire Nuclear Station  
CNS-Catawba Nuclear Station

MNS-55

REV. 1  
(2/29/88)

DUKE POWER COMPANY RESPONSE TO  
NRC COMPLIANCE BULLETIN 87-02

Attachment 1

Fastener Testing Data Sheet

1

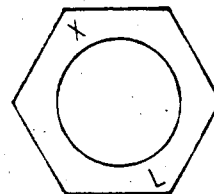
Sample ID#: MNS/NQ/NUT/36

Fastener Description: Load Stud Jam Nuts For 1/4"X4 & 1/2"x2 1/2  
Mech. Snb. (Rec.# 7320 840717) Nut, Jam  
Carbon Steel, ASTM A307 GR.A, 3/8"X16 UNC,  
ANSI B18.2.2, CL. 2B Fit. (MMIS ID #02641587N)  
PIR O-M87-0305 Was Written 12-15-87.

Description of Sample Stock Location: Bin# 03-EA-05-3

Material Specification as  
Documented by Licensee Records: None

Head Marking (Specification and Manufacturer):



Class/Procurement Level: See Problem Investigation  
Report (PIR)  
Serial No. o-M87-0305

General Plant Application  
(e.g., Pressure Boundary, Structural): Structural

Vendor: ---

QA Requirements Imposed on Vendor: ---

Licensee Representative:

Signature: David E. Whitaker Date: February 11, 1988

1

ONS-Oconee Nuclear Station  
MNS-McGuire Nuclear Station  
CNS-Catawba Nuclear Station

MNS-71

REV. 1  
(2/29/88)

DUKE POWER COMPANY RESPONSE TO  
NRC COMPLIANCE BULLETIN 87-02

Attachment 1

Fastener Testing Data Sheet

<sup>1</sup>  
Sample ID#: CNS/QA/BOLT/6

Fastener Description: Hex Head Bolt, Alloy Steel, 1 X 3 1/4"

Description of Sample Stock Location: Bin# 05-0C-02-1L

Material Specification as  
Documented by Licensee Records: SA193 GR.B7

Head Marking (Specification and Manufacturer):  
SA193 GR.B7/  
Erie Bolt Corp.



Class/Procurement Level: ASME Section III, CL.1  
Nuclear Safety Related

General Plant Application  
(e.g., Pressure Boundary, Structural): Pressure Boundary

Vendor: Westinghouse Electric Corp.  
Charlotte, NC.

QA Requirements Imposed on Vendor: ASME Section III, NCA-3800

Licensee Representative:

Signature: W. B. Bailey Date: February 11, 1988

<sup>1</sup>

ONS-Oconee Nuclear Station  
MNS-McGuire Nuclear Station  
CNS-Catawba Nuclear Station

CNS-11

REV. 1  
(2/29/88)

DUKE POWER COMPANY RESPONSE TO  
NRC COMPLIANCE BULLETIN 87-02

Attachment 2

Test Data Summary

Sample ID# CNS/QA/BOLT/6

Hardness \_\_\_\_\_

Ultimate Tensile Strength 136.3 Ksi (Sample "A")

0.2% Yield Strength 125.5 Ksi (Sample "A")

Charpy Impact Not Required

Chemical Analysis (% wt.) Sample "A" (Compared to SA193 GR.B7)

Iron \_\_\_\_\_

Titanium \_\_\_\_\_

Carbon 0.42

Vanadium \_\_\_\_\_

Manganese 0.91

Columbium +  
Tantalum \_\_\_\_\_

Phosphorus 0.012

Copper \_\_\_\_\_

Sulfur 0.032

Aluminum \_\_\_\_\_

Silicon 0.25

Zinc \_\_\_\_\_

Chromium 1.03

Tin \_\_\_\_\_

Nickel \_\_\_\_\_

Boron \_\_\_\_\_

Molybdenum 0.22

Others \_\_\_\_\_

\*Properties found out of specification shall be noted with an  
Asterisk

Note: For each fastener description, two samples were obtained  
and arbitrarily labeled "A" and "B".



DUKE POWER COMPANY RESPONSE TO  
NRC COMPLIANCE BULLETIN 87-02

Attachment 1

Fastener Testing Data Sheet

<sup>1</sup> Sample ID#: CNS/QA/STUD/10

Fastener Description: Stud, Stainless Steel, 3/4"-10x5 3/4"

Description of Sample Stock Location: Bin# 5N-23-05-03

Material Specification as  
Documented by Licensee Records: SA564 TP630

Head Marking (Specification and Manufacturer): SA564 TP630/  
A&G Engineering



Class/Procurement Level: Nuclear Safety Related  
ASME III, CL.1

General Plant Application  
(e.g., Pressure Boundary, Structural): Pressure Boundary

Vendor: Borg-Warner,.  
Vernon, CA

QA Requirements Imposed on Vendor: ASME III, NCA-3800  
10 CFR Part 21

*wps* Licensee Representative:

Signature: *W/B* Date: February 11, 1988

<sup>1</sup> ONS-Oconee Nuclear Station  
MNS-McGuire Nuclear Station  
CNS-Catawba Nuclear Station

CNS-19

REV. 1  
(2/29/88)

DUKE POWER COMPANY RESPONSE TO  
NRC COMPLIANCE BULLETIN 87-02

Attachment 1

Fastener Testing Data Sheet

1

Sample ID#: CNS/NQ/SCRW/12

Fastener Description: Hex Head Cap Screw, Bright Low Carbon Steel,  
Grade 2, 7/16"-20x2"

Description of Sample Stock Location: Bin# 02-0B-02-4L

Material Specification as  
Documented by Licensee Records: SAE J429 GR.2

Head Marking (Specification and Manufacturer):

SAE J429 GR.5/Unknown

Class/Procurement Level: Non QA Condition



General Plant Application  
(e.g., Pressure Boundary, Structural): Stock

Vendor: Mackson, Inc.  
Rock Hill, SC

QA Requirements Imposed on Vendor: None

Licensee Representative:

Signature: W. B. B. B. Date: February 11, 1988

1

OCS-Oconee Nuclear Station  
MNS-McGuire Nuclear Station  
CNS-Catawba Nuclear Station

CNS-23

REV. 1  
(2/29/88)

DUKE POWER COMPANY RESPONSE TO  
NRC COMPLIANCE BULLETIN 87-02

Attachment 2

Test Data Summary

Sample ID# CNS/NQ/SCRW/12

Hardness 29 HRC

Ultimate Tensile Strength \_\_\_\_\_

0.2% Yield Strength \_\_\_\_\_

Charpy Impact \_\_\_\_\_

Chemical Analysis (% wt.) Sample A (Compared to SAE J429 Gr. 5 /A449)

Iron \_\_\_\_\_

Titanium \_\_\_\_\_

Carbon 0.33

Vanadium \_\_\_\_\_

Manganese 0.73

Columbium +  
Tantalum \_\_\_\_\_

Phosphorus 0.011

Copper \_\_\_\_\_

Sulfur 0.011

Aluminum \_\_\_\_\_

Silicon \_\_\_\_\_

Zinc \_\_\_\_\_

Chromium \_\_\_\_\_

Tin \_\_\_\_\_

Nickel \_\_\_\_\_

Boron \_\_\_\_\_

Molybdenum \_\_\_\_\_

Others \_\_\_\_\_

\*Properties found out of specification shall be noted with an Asterisk

Note: For each fastener description, two samples were obtained and arbitrarily labeled "A" and "B".

DUKE POWER COMPANY RESPONSE TO  
NRC COMPLIANCE BULLETIN 87-02

Attachment 1

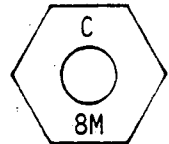
Fastener Testing Data Sheet

<sup>1</sup>  
Sample ID#: CNS/QA/NUT/21

Fastener Description: Hex Nut, Stainless Steel,  
3/4"-10

Description of Sample Stock Location: Bin# 5N-23-02-01

Material Specification as  
Documented by Licensee Records: SA194 GR.8M



Head Marking (Specification and Manufacturer): SA194 GR.8M/  
Coast Industrial Supply

Class/Procurement Level: ASME III, CL.1  
Duke Power QA Condition 1

General Plant Application  
(e.g., Pressure Boundary, Structural): Pressure Boundary

Vendor: Borg Warner,  
Van Nuys, CA

QA Requirements Imposed on Vendor: ASME III, NCA-3800

*WJ* Licensee Representative:

Signature: WJ Bailey Date: February 11, 1988

<sup>1</sup>

ONS-Oconee Nuclear Station  
MNS-McGuire Nuclear Station  
CNS-Catawba Nuclear Station

CNS-41

REV. 1  
(2/29/88)

DUKE POWER COMPANY RESPONSE TO  
NRC COMPLIANCE BULLETIN 87-02

Attachment 1

Fastener Testing Data Sheet

1

Sample ID#: CNS/QA/NUT/24

Fastener Description: Hex Nut, Brass,  
5/16"-18

Description of Sample Stock Location: Bin# 5N-30-03-04

Material Specification as  
Documented by Licensee Records: Brass

Head Marking (Specification and Manufacturer): None/Unknown

Class/Procurement Level: Duke Power QA Condition 1  
Standard Stock

General Plant Application  
(e.g., Pressure Boundary, Structural): Structural

Vendor: Sure-Loc, Inc.  
Charlotte, NC

QA Requirements Imposed on Vendor: None

*WJB* Licensee Representative:

Signature: WJB Date: February 11, 1988

1

ONS-Oconee Nuclear Station  
MNS-McGuire Nuclear Station  
CNS-Catawba Nuclear Station

CNS-47

REV. 1  
(2/29/88)

DUKE POWER COMPANY RESPONSE TO  
NRC COMPLIANCE BULLETIN 87-02

Attachment 1

Fastener Testing Data Sheet

<sup>1</sup>  
Sample ID#: CNS/QA/NUT/25

Fastener Description: Hex Nut, Stainless Steel,  
5/8"-11, Borg Warner P/N 72184-013

Description of Sample Stock Location: Bin# 5N-25-08-02

Material Specification as  
Documented by Licensee Records: SA194 GR.8M

Head Marking (Specification and Manufacturer): SA194GR.8MB/Unknown



Class/Procurement Level: ASME III CL.3  
Duke Power QA Condition 1  
Duke Class C

General Plant Application  
(e.g., Pressure Boundary, Structural): Pressure Boundary

Vendor: Borg Warner  
Van Nuys, CA

QA Requirements Imposed on Vendor: ASME III NA-3700  
10 CFR Part 21

*WJB* Licensee Representative:

Signature: *WJB*

Date: February 11, 1988

<sup>1</sup>

ONS-Oconee Nuclear Station  
MNS-McGuire Nuclear Station  
CNS-Catawba Nuclear Station

CNS-49

REV. 1  
(2/29/88)

DUKE POWER COMPANY RESPONSE TO  
NRC COMPLIANCE BULLETIN 87-02

Attachment 1

Fastener Testing Data Sheet

1

Sample ID#: CNS/QA/NUT/27

Fastener Description: Hex Nut, Special Standard Finish, Carbon Steel,  
ASTM A563 Grade B, 1 1/2"-6

Description of Sample Stock Location: Bin# 05-0E-11-1L

Material Specification as  
Documented by Licensee Records: ASTM A563 Grade B

Head Marking (Specification and Manufacturer): None/Acimet Mfg.

Class/Procurement Level: Duke Power QA Condition 1

General Plant Application  
(e.g., Pressure Boundary, Structural): Stock

Vendor: Patterson Industries  
E. Liverpool, OH

QA Requirements Imposed on Vendor: ANSI N45.2(Minimum)

*WJ* Licensee Representative:

Signature: *WJ B. [Signature]* Date: February 11, 1988

1

ONS-Oconee Nuclear Station  
MNS-McGuire Nuclear Station  
CNS-Catawba Nuclear Station

CNS-53

REV. 1  
(2/29/88)

DUKE POWER COMPANY RESPONSE TO  
NRC COMPLIANCE BULLETIN 87-02

Attachment 1

Fastener Testing Data Sheet

1

Sample ID#: CNS/QA/NUT/28

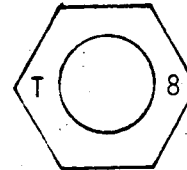
Fastener Description: Hex Nut, Stainless Steel, A194 Grade 8, 3/8"-16

Description of Sample Stock Location: Bin# 5N-30-05-01

Material Specification as  
Documented by Licensee Records: ASTM A194 Grade 8

Head Marking (Specification and Manufacturer):

A194 GR.8/Texas Bolt



Class/Procurement Level: Duke Power QA Condition 4

General Plant Application  
(e.g., Pressure Boundary, Structural): Pressure Boundary

Vendor: Mackson Inc.,  
Rock Hill, SC

QA Requirements Imposed on Vendor: ANSI N45.2(Minimum)

Licensee Representative:

Signature: WJ B. [Signature] Date: February 11, 1988

1

ONS-Oconee Nuclear Station  
MNS-McGuire Nuclear Station  
CNS-Catawba Nuclear Station

CNS-55

REV. 1  
(2/29/88)



DUKE POWER COMPANY RESPONSE TO  
NRC COMPLIANCE BULLETIN 87-02

Attachment 2

Test Data Summary

Sample ID# CNS/NQ/NUT/36

Hardness 26 HRC (Sample "A")

Ultimate Tensile Strength

0.2% Yield Strength

Charpy Impact

Chemical Analysis (% wt.) Sample "A" (Compared To SA194 GR.2H)

Iron <u></u>	Titanium <u></u>
Carbon <u>0.47</u>	Vanadium <u></u>
Manganese <u></u>	Columbium + Tantalum <u></u>
Phosphorus <u>0.008</u>	Copper <u></u>
Sulfur <u>0.009</u>	Aluminum <u></u>
Silicon <u></u>	Zinc <u></u>
Chromium <u></u>	Tin <u></u>
Nickel <u></u>	Boron <u></u>
Molybdenum <u></u>	Others <u></u>

\*Properties found out of specification shall be noted with an Asterisk

Note: For each fastener description, two samples were obtained and arbitrarily labeled "A" and "B".