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ILLINOIS POWER COMPANY

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U-10271
CLINTON POWER STATION, P.O. BOX 678, CLINTON, ILLINOIS 61727

April 25, 1985

Docket No. 50-461

Mr. James G. Keppler
Regional Administrator
Region III
U.S. Nuclear Regulatory Commission
799 Roosevelt Road
Glen Ellyn, Illinois 60137

Subject: Potential 10CFR50.55(e) Deficiency 55-85-01
Substitution of AISI-1010 Carbon Steel All Thread Rod
for ASTM A-36

Dear Mr. Keppler:

On February 1, 1985, Illinois Power Company notified Mr. R. Knop, NRC Region III (Ref. IP memorandum Y-26072 dated February 1, 1985) of a potentially reportable deficiency concerning the indeterminate quality of certain carbon steel all thread rod. This initial notification was followed by one (1) interim report (Ref: IP letter U-10251, D. P. Hall to J. G. Keppler, dated February 28, 1985). Illinois Power's investigation of this matter is complete. Our investigation identified, documented and evaluated for adequacy, those electrical installations which utilized the subject AISI-1010 carbon steel threaded rod. Our investigation into this matter has determined that this issue does not represent a reportable deficiency under the provisions of 10CFR50.55(e). This letter is submitted as a final report in accordance with the requirements of 10CFR50.55(e). Attachment A provides the details of our investigation.

We trust that this final report provides you sufficient background information to perform a general assessment of this potentially reportable deficiency and adequately describes our overall approach to resolve this issue.

Sincerely yours,

D. P. Hall
Vice President

RLC/lr (NRC2)
Attachment
cc: NRC Resident Office
Director, Office of I&E, US NRC, Washington, DC 20555
Illinois Department of Nuclear Safety
INPO Records Center

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ATTACHMENT A

Illinois Power Company
Clinton Power Station

Docket No. 50-461

Potential 10CFR50.55(e) Deficiency 55-85-01
Substitution of AISI-1010 Carbon Steel
All Thread Rod for ASTM A-36

Final Report

Statement of Potentially Reportable Deficiency/Background

Baldwin Associates (BA) Quality Engineering Procurement Department identified a deficiency with threaded carbon steel rod, the quality of which was indeterminate (Ref. Nonconformance Report (NCR) No. 70456). The identified deficiency involves vendor (Barr Saunders, Inc.) supplied AISI-1010 carbon steel threaded rod, 3/8" (HT #HC0032) and 1/2" (HT #HC0148) in diameter. The AISI-1010 carbon steel rod was supplied by the vendor in lieu of ASTM A-36 which was specified on purchase order (PO), #C-30428. AISI-1010 carbon steel rod has lower physical properties (tensile and yield strength) than A-36. This material was utilized in safety-related electrical installations.

Investigation Results

Illinois Power prepared and implemented an investigation plan to determine the extent of this deficiency at Clinton Power Station (CPS). The investigation plan included:

1. A review of the material specification/tensile requirements for AISI-1010 and ASTM A-36 material was performed.

2. A review was performed by Baldwin Associates Resident Engineering (BARE) to identify the electrical installation details utilizing threaded rod, reference E05-1200, E05-1900 and E06-1000 Series Drawings.

3. The identified installation details were provided to Sargent and Lundy (S&L) for evaluation of design requirements and assessment of the use of AISI-1010 rod in lieu of ASTM A-36 material.

ATTACHMENT A
(continued)

A review of purchase orders issued to Barr Saunders, Inc. was performed and the following AISI carbon steel material was supplied in lieu of ASTM A-36 which was specified on the purchase order:

PO #C-33584

Grade & Size			Qty Purchased	Qty on Hold
AISI-1008	1/4"x 6'	(HT #39884)	10	0
AISI-1008	3/8"x 6'	(HT #20845)	10	0
AISI-1010	5/8"x 6'	(HT #20929)	20	1
AISI-1010	3/4"x 6'	(HT #HC0652)	20	0
AISI-1010	1"x 6'	(HT #HC0806)	20	12
AISI-1020	1 1/8"x 6',x7'	(HT #211239)	27	19(6')

NOTE: The above material was purchased for the Millwright Department to be used in temporary installations only and was not utilized in safety-related applications (Ref. Letter SGL-115-85 R/1, dated March 18, 1985).

PO #C-32734

AISI-1010 3/8" (HT #SY1077)
AISI-1010 1/2" (HT #KC5964)

NOTE: Purchasing requisition #91261 specified that the grade of material was to be ASTM A-36, but PO #C-32734 did not specify the grade of material required other than carbon steel (Ref. NCR No. 27243).

A subsequent review of all issued purchase orders for threaded rod was performed. NCRs were initiated for quality-related and safety-related purchase orders (Ref. NCR Nos. 28731, 28732 and 70771). All NCRs have been resolved and closed.

A review to identify those electrical installation details which utilize threaded rod procured on PO #C-30428 (1/2" & 3/8") was performed by BA Resident Engineering, (Ref. Letter JSA-15-85 dated February 14, 1985). A list of installation details was provided to S&L for evaluation of design requirements and for assessing the impact of utilizing AISI-1010 rod in lieu of ASTM A-36 material.

Corrective Action

An evaluation of design requirements was performed by S&L in order to evaluate acceptability of AISI-1010 in lieu of ASTM A-36 material for electrical instaliation details. This evaluation indicates that the identified details are acceptable with the lower strength of AISI-1010 carbon steel rod. This review also indicated that electrical enclosure installations per details 44-1, 44-2 and 44-5 on drawing E05-1200 must be within the new limits as provided on Field Engineering Change Notice (FECN) 8386. (Ref. Letter SLS-I-4960, dated February 27, 1985).

Field Engineering Change Notice 8386, was issued by S&L to add minimum centerline rod dimensions for electrical enclosure details 44-1, 44-2 and 44-5. These new dimensions will control the future use of these details.

An evaluation of minimum center line rod dimensions for past electrical enclosure installations was performed by BA Resident Engineering, and it has been determined that none are less than the minimum required by FECN 8386, (Ref. Letter SGL-170-85, dated April 11, 1985).

Safety Implications/Significance

Illinois Power's investigation of this matter is complete. Sargent & Lundy has evaluated the safety significance of this issue and has stated, based on their calculations, that all identified details are acceptable with AISI-1010, which has a lower yield and tensile strength than A-36 carbon steel rod (Ref. Letter SLS-I-4960, dated February 27, 1985). Illinois Power has reviewed and evaluated the findings associated with this investigation and has concluded that the issue does not represent a reportable condition under the provisions of 10CFR50.55(e).