REPORT NO.: 99901022/85-01	INSPECTION DATE(S): June 12-14, 1985	INSPECTION ON-SITE HOURS: 44
CORRESPONDENCE ADDRESS: H. Mi 1: CRGANIZATIONAL CONTACT: M	atch Incorporated r. A. E. Hatch, President 206 Myrtle Avenue 1 Paso, Texas 79901 r. Edward Taylor	
TELEPHONE NUMBER: 9 PRINCIPAL PRODUCT: Electr	15-542-1991 ical Switchgear Panels and Mair	n Control Boards.
NUCLEAR INDUSTRY ACTIVITY:	Less than 1%.	
ASSIGNED INSPECTOR:	Naidu	11 4 / 55
OTHER INSPECTORS: J. C.	Harper Rupps - Rupphavon National Lab	boratory (PNL)
APPROVED BY:	Merschoff, Chief, RIS	ilalos-
INSPECTION BASES AND SCOPE	:	
A. <u>BASES</u> : 10 CFR Part	21 and 10 CFR 50 Appendix B.	
B. <u>SCOPE</u> : Evaluate the Program.	e implementation of the Hatch Q	uality Assurance
PLANT SITE APPLICABILITY: 1 and 2, 50-254, 50-265; S	Dresden 2 and 3, 50-237, 50-2 outh Texas Project, 50-498.	49; Quad Cities

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Α.	Inspection Issues		
	Hatch Incorporated (HI) cabinets for Quad Cities both of which are owned May 1985, receipt inspec in weld documentation of personnel observed that to weld portions of the Shielded Metal Arc Weld Procedure Specifications (AWS) D-1.1. HI admitted performed on the cabines developed GMAW procedum Architect Engineer for	manufactured safety related s 1/2 and Dresden 2/3 nuclea by Commonwealth Edison Comp ctions at Quad Cities identi f Hatch supplied equipment. the Gas Metal Arc Welding (panels, however, the docume ing (SMAW) was performed uti s (WPSs) qualified to Americ ed to CECo that unauthorized ts without an approved WPSs. es which were approved by Sa CECo.	electrical r power stations, any (CECo), Chicago. In fied discrepancies Specifically, GMAW) process was used ents indicated that lizing Welding an Welding Society I GMAW welds were HI subsequently argent & Lundy, the
	The purpose of this ins implementation of HI's	pection was to determine the quality assurance program.	adequacy of the
Β.	Background Information		
	Hatch Incorporated (HI)	manufactures Main Generator	Control Panels

Hatch Incorporated (HI) manufactures Main Generator Control Panels, Direct Current (DC) distribution panels, transfer feeder panels and various panels for installation at power plants, chemical plants and nuclear generating stations. HI also manufactured electrical panels for the Department of Energy for installation at test sites in Nevada.

C. Inspection Findings

Nonconformances

 10 CFR 50 Appendix B Criterion IX states in part "Measures shall be established to assure that special processes, including welding, ... are controlled and accomplished using qualified procedures in accordance with applicable codes, standards specification, criteria and other special requirements."

The HI QC manual requires all welding activities associated with the construction of safety related panels to comply with AWS D-1.1.

The following were contrary to the above:

a. Weld Procedure Specifications (WPSs) No. 1 and 2 were qualified to AWS D-1.1 (which addresses welding of base metals greater than 0.125 inches) to Weld 10-14 gauge sheet

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		metal (thickne which is perti thick.	ess less than 0.125 inch) instead of inent to welding base metals less than	AWS D-1.3 n 0.125
		b. For the Gas Me the maximum th is qualified b Contrary to th been approved	etal Arc Welding process, AWS D-1.1 s nickness permitted to be welded is the by the Weld Procedure Specification (his specification, WPSs No. 3, 4 and without specifying the weld thicknes	pecifies that at which WPS). 5 have s.
		c. AWS D-1.1, doe Contrary to the to Weld ASTM	es not recognize welding nuts to shee his, WPS No. 6 has been qualified and A354 nuts to ASTM A366 sheet metal.	t metal. approved
		d. One unqualifi	ed welder was permitted to perform we	lding.
	2.	Criterion V of 10 affecting quality procedures or draw or qualitative accuractivities have be	CFR 50 Appendix B states in part "Act shall be prescribed by documented ins ingsshall include appropriate quan eptance criteria for determining that en satisfactorily accomplished.	ivities tructions, titative important
		a. Contrary to t establish a p acceptance cr	he above, Hatch Incorporated (HI) did rocedure to crimp lugs or define the iteria for inspecting the crimped con	not nections.
		b. Contrary to t automatically the requireme	he above, HI did not establish a proc welding threaded studs to sheet meta nts of Part 4, Section F of AWS D-1.1	edure for 1 to meet
D.	Othe	er Inspection Findin	gs and Comments	
	1.	Review of Welding	Procedures	
		HI uses welding pr panels) are fabr; channel. Prequali D-1.1 are used ext in selected sectio matically welded w	ocedures to weld cabinets. These cab ated from sheet steel, angle iron, fl fied fillet weld configurations meeti ensively. Seal, groove, and seam wel ns of the cabinet. Threaded studs ar ith a stud welding gun inside the cab	inets (or at bar and ng AWS ds are used e auto- oinets to

support sub-panel assemblies on which electric starters, contactors, relays, and other devices are mounted. HI used two WPSs to weld safety related cabinets intended for installation at Quad Cities. One of the cabinets successfully withstood a shake table test at Wyle Laboratories.

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When these cabine indentifed that to to weld certain s indicated that th qualified to be u without the super unauthorized use. and 6) to address for Commonwealth	ts arrived at Quad Cities, receip he Gas Metal Arc Welding (GMAW) p ections of the cabinet. HI's wel e Shield Metal Arc Welding (SMAW) sed. The HI QA manager stated th visor's knowledge, and that QC fa HI belatedly developed four WPS GMAW. Sargent & Lundy, the Arch Edison, approved these WPS in May	t inspections rocess was used ding documentation process was at GMAW was used tiled to discover its is (#3, 4, 5 titect Engineer 7, 1985.
a. The NRC insp prequalified ments regard order that t These variat "Joint Weldi El covers th status to jo the provisio joint weldir The review o	ectors reviewed HI WPSs 1 and 2 w to AWS D-1.1. AWS D-1.1 has spe ing the variables that must be ad he WPSs be considered as "prequal les are addressed in Appendix E, ng Procedure Requirements" states e mandatory requirements for acco int welding procedures (see 5.1.1 n of the code that may be modifie g procedure is qualified by tests f WPS 1 and 2 indicated the follo	hich were cific require- ldressed in ified status". Part A, titled in part "Table ording prequalified 1). Table E2 covers ed when the s (see 5.2)"
<pre>(1) The WPS 11-14) D-1.1 p for thi relatic</pre>	s have been used to weld sheet me which are less than 0.125 inch th aragraph 1.2.2 recommends the use ckness less than 0.125". (gauge nship is 11 = 0.119, 12 = 0.104,	etal (gauges lick. AWS of AWS D-1.3 to inches 14 = .074).
(2) For the 30°F". paragra "when t metals	Preheat/Interpass entry, the WPS The WPSs would be in compliance ph 4.2 if the statement was revis he ambient temperature is below 3 shall be preheated to 70°F before	is state "below to AWS D-1.1 sed to read 32°F, the e welding".
(3) The WPS will be	s state that post weld heat treat by natural cooling. The WPSs wo	tment (PWHT) buld be in

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	complianc or "not a on cabine	e to AWS D-1.1 if the statement was " pplicable". PWHT is not required for ts.	none" welds
	(4) The WPSs Prequalif configura section 2	did not show the weld joint configura ied WPS should have one of the joint tions illustrated in AWS D-1.1, Part	tion. C of
	<pre>(5) The WPSs progressi versa in progressi not be ap "overhead</pre>	do not expressly state whether the we on was from upward to downward or vic vertical welding. Instead, the WPS s on as "forehand". This description w plicable for the "flat", "horizontal" " positions of welding.	ld e tated ould or
b.	The NRC inspec Arc Welding (G comply with th	tors reviewed HI WPSs 3, 4 and 5 for MAW) and determined that the followin e AWS D-1.1 code.	Gas Metal ig do not
	(1) The maxim specified welded sh	um thickness permitted to be welded w . In GMAW the maximum thickness that ould be specified by qualified WPSs.	as not can be
	<pre>(2) The WPSs was perfo (11) cons welding i</pre>	do not state the position in which we rmed to qualify the WPSs. Paragraph iders a change in the position in whi s done to be an essential change.	1ding 5.5.2.3 ich
	(3) The WPSs and do no	incorrectly address the weld progress t meet paragraph 5.5.2.3(15).	ion
с.	Items a(1) and 1.a. and 1.b.,	b(1) above were identified as noncor respectively.	formances
d.	The NRC inspec weld a ASTM A3 does not recog	tors reviewed WPS #6 which was qualit 54 nut to ASTM A366 sheet metal. AWS nize welding nuts to sheet metal.	fied to 5 D-1.1
e.	Threaded studs Nelson Stud gu Part F of the welding and pr The inspectors procedure to p	were welded to cabinets with an auto in without a written procedure. Sect AWS D-1.1 specifies the requirements rovides acceptance criteria for inspec informed HI that failure to establish perform safety related welding was an	omatic ion 4, for stud ctions. sh a item of

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2.	nonconforman Review of Welder	ice contrary to Cri Qualification Reco	iterion V of 10 CFR Ap ords	pendix B.
	a. 125 Volt DC The above pa Texas Nuclea travelers an that six well of the welde Testing Labo Five of the was qualifie indicate tha is not accep states "A we identified i fied to welc same group o numerically	Distribution Panel inels are intended in Power Station. Id production drawind ders performed well er qualification re- bratories (EPTL) ce six certifications ed to weld with an at he welded with a brable per Paragrap elder who is qualit in the following ta d or tack weld with designation and with lower group design	for installation in t From the review of sh ings, the inspectors d lding on the cabinets. ecords indicated that ertified the welders i s were acceptable. On E-6010 type electrode an E-7018 type electrode ph 5.16.3 of AWS D-1.1 fied for SMAW with an able shall be consider h any other electrode th any electrode listen nation."	he South op letermined Review El Paso n 1977. e welder . Records ode. This . Which electrode red quali- in the ed in a
	<u>Group Des</u>	signation <u>AWS</u>	Electrode Classificat EXX15, EXX16, EXX18	<u>cion</u>
	F3 F2	3	EXX10, EXX11 EXX12, EXX13, EXX14	
	Nonconformance 1.	.d. was identified	in this area.	
	b. Transfer Sta	ations and Transfer	r Feeder Panels	
	The above pa	anels are intended	for installation in [resden

Units 2 and 3 and Quad Cities. The inspectors determined from review of the shop traveler and production drawings that two welders performed welding on the panels. Review of the welder qualification records indicated that EPTL certified the welders. The certifications, dated August 1977, indicated that a Manual Shielded Metal Arc Process was used to weld 3/8" thick metal plates to A-36, with a 1/8" diameter 7018 type electrode in the 1G, 2G and 3G positions. The certifications were considered acceptable.

Shop Tour The inspectors toure were being wired. N	d the chan area where electric	
The inspectors toure were being wired. N	d the chan area where electric	
nuclear power plants	to work was in process that was s.	al components intended for
The inspectors obser electrical lug crimp established for an i manager that failure crimping was an item Criterion V.	rved that there was no procedur bing and no inspection criteria inspection. The inspectors inf e to establish a procedure for n of nonconformance to 10 CFR A	e to perform was ormed the HI QA safety-related ppendix B
Review of Audits Per	rformed on Hatch	
The inspectors revie	ewed the following audits perfo	rmed on
a. Representatives San Francisco, evaluate the in relative to the Plant. The aud of material fro ANSI 45.2.6 by in-process insp November 29, 19 and closed the	s of Bechtel Power Corporation audited HI during July 25-27, mplementation of HI's quality a e panels fabricated for South T dit identified two deficiencies om an unapproved source and non using a level II inspector to pections. Bechtel reaudited HI 984, verified the corrective ac audit findings.	(Bechtel), 1984 to ssurance program exas Nuclear , procurement -adherence to document on tion taken
 Representatives Illinois audita 1984. The purp implementation of Transfer St. Station Units specified in S findings. Doc action. However findings. 	s of Commonwealta Edison Compared Hatch Incorporated (HI) during pose of the audit was to evaluate of the HI QA program relative ations and Transfer Feeder Asse 2 and 3 and Quad Cities Units 1 pecification T-3307. The audit uments indicate that HI took action er, CECo had not completely clo	ny, Chicago, ing November 14-16, ite the to the manufacture emblies for Dresden 1 and 2, as t identified three dequate corrective osed all the audit
	electrical lug crimy established for an imanager that failure crimping was an iter Criterion V. <u>Review of Audits Per</u> The inspectors revie HI. a. Representative San Francisco, evaluate the in relative to the Plant. The au of material fre ANSI 45.2.6 by in-process ins November 29, 1 and closed the b. Representative Illinois audit 1984. The pur implementation of Transfer St Station Units specified in S findings. Doc action. Howey	 The Inspectors observed that not inspection criteria established for an inspection. The inspectors inf manager that failure to establish a procedure for crimping was an item of nonconformance to 10 CFR A Criterion V. <u>Review of Audits Performed on Hatch</u> The inspectors reviewed the following audits performed. a. Representatives of Bechtel Power Corporation San Francisco, audited HI during July 25-27, evaluate the implementation of HI's quality a relative to the panels fabricated for South T Plant. The audit identified two deficiencies of material from an unapproved source and nor ANSI 45.2.6 by using a level II inspector to in-process inspections. Bechtel reaudited HI November 29, 1984, verified the corrective ac and closed the audit findings. b. Representatives of Commonwealta Edison Compar Illinois audited Hatch Incorporated (HI) duri 1984. The purpose of the audit was to evaluate implementation of the HI QA program relative of Transfer Stations and Transfer Feeder Asses Station Units 2 and 3 and Quad Cities Units 1 specified in Specification T-3307. The audit findings.

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E. Persons Conta	cted:	
E. <u>Persons Conta</u> A. E. Hatch	<u>cted</u> : President	

F. Exit Interview:

At the conclusion of the inspection, the inspectors met with the persons identified in Section E and discussed the scope and findings of the inspection.