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FACIL:50-410 Nine Mile Point Nuclear Station, Unit 2, Niagara Moha 05000410  
AUTH.NAME                    AUTHOR AFFILIATION    MHL  
RHODE,G.K.                 Niagara Mohawk Power Corp.  
RECIP.NAME                 RECIPIENT AFFILIATION  
CARLSON,R.T.               Region 1, Philadelphia, Reactor Construction & Engineeri

**SUBJECT:** Final deficiency rept, originally reported on 800908, re ASME 3 procedures used to weld rebar 14 to shear bars on reactor pedestal Embedment PB-37 were not code applicable for work performed. Correct ASME 3 procedures were used.

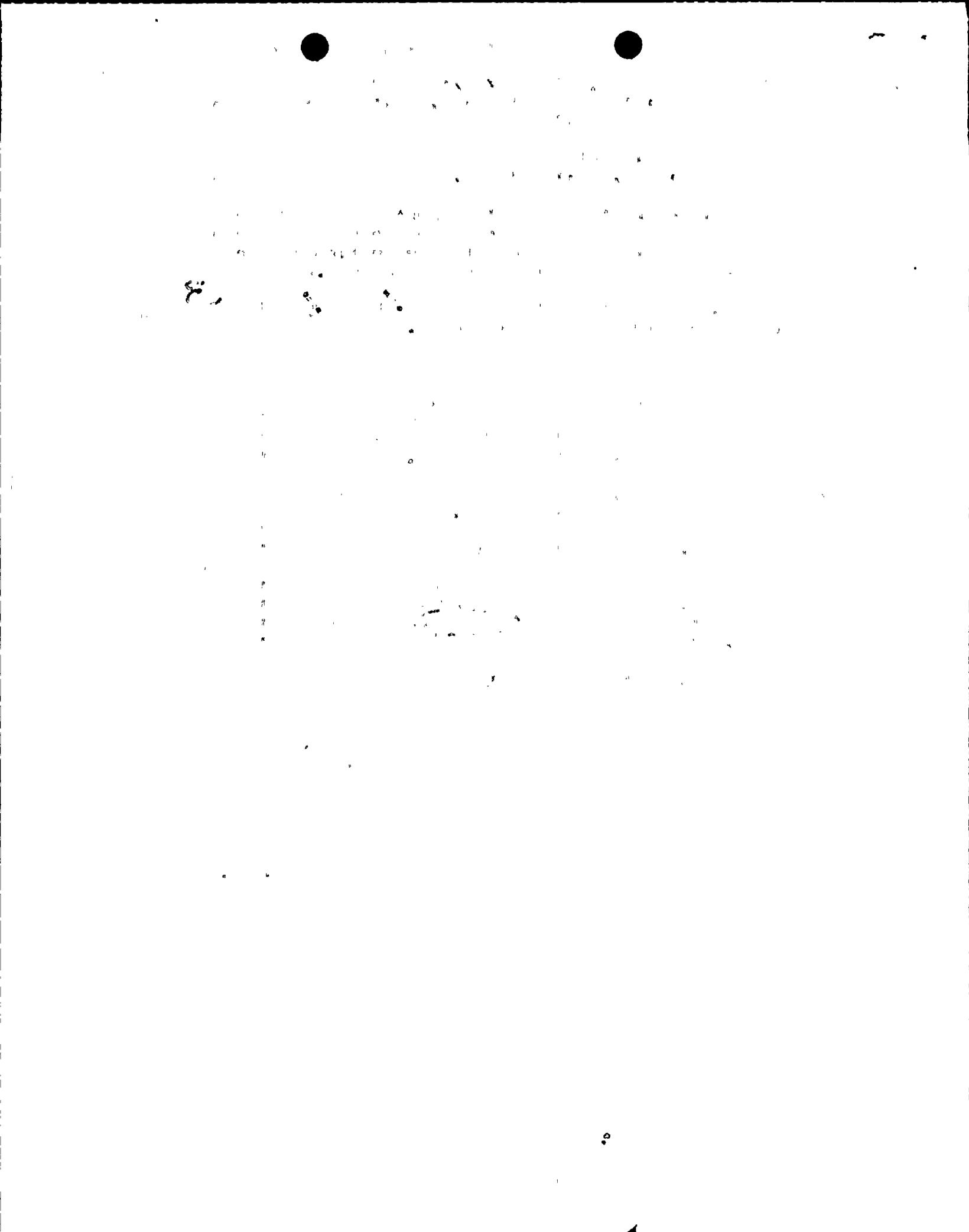
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NIAGARA MOHAWK POWER CORPORATION/300 ERIE BOULEVARD WEST, SYRACUSE, N.Y. 13202/TELEPHONE (315) 474-1511

December 12, 1980

Office of Inspection and Enforcement  
Region I  
Attention: Mr. R. T. Carlson, Chief  
Reactor Construction and Engineering  
Support Branch  
U. S. Nuclear Regulatory Commission  
631 Park Avenue  
King of Prussia, PA 19406

Dear Mr. Carlson:

Re: Nine Mile Point Unit 2  
Docket No. 50-410

In accordance with Paragraph 50.55(e) (3) of the Commission's Regulations, attached is the final report regarding the potential deficiency involving Pedestal Embedment PB-37 at Nine Mile Point Unit 2. As indicated in the attached report, this deficiency could not have adversely affected the safety of operation of Unit 2. Corrective action is, however, being taken to prevent recurrence of this problem.

Very truly yours,

NIAGARA MOHAWK POWER CORPORATION

Gerald K. Rhode  
Vice President  
System Project Management

PEF:ja  
Attachment  
xc: Director of Inspection and Enforcement  
U. S. Nuclear Regulatory Commission  
Washington, D. C. 20555

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Final Report  
Potential Reportable 50.55(e) Deficiency  
Involving Pedestal Embedment PB-37

Introduction

This problem as described below was originally reported to Mr. McGaughy of the Nuclear Regulatory Commission Region I staff on September 8, 1980. An interim report on this matter was sent to the Nuclear Regulatory Commission on October 6, 1980.

Description of the Deficiency

Eight sections of No. 14 rebar were welded to shear bars on a reactor pedestal embedment plate in the field. In performing this work the following deviations were identified:

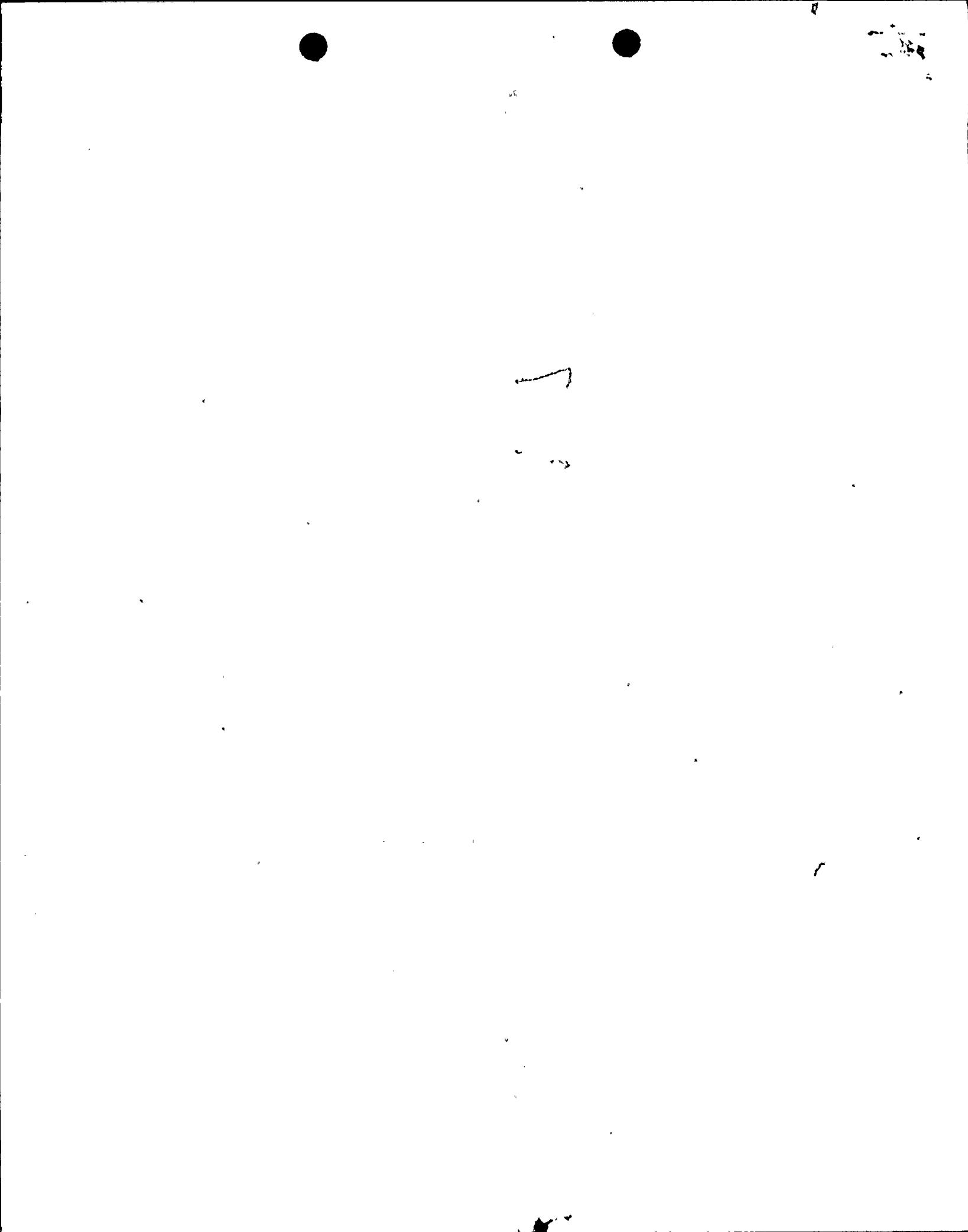
1. The welding procedure used was an ASME III procedure which was not qualified to the code applicable for the work performed, AWS D12.1.
2. The welder was qualified to ASME IX but not the applicable code, AWS D12.1.
3. The welds were not tested using sister splices as required by the specification.

As such, the structure did not conform to the Code, the specification, nor the Preliminary Safety Analysis Report. In addition, the eight rebar to pedestal plate welds were no longer accessible at the time the deficiency was found. The problem was reported by the Contractor in accordance with his Quality Assurance Program following a review of documentation.

Evaluation and Corrective Action

Resolution of this problem has proceeded as follows:

1. It has been determined that the welding procedure used for the welding of No. 14 rebar to embedment plate PB-37 is qualified to ASME III and was used with a 300°F preheat. This procedure is adequate for the work performed and will provide acceptable results. This has been verified by comparing the welding parameters specified in the procedure used with those specified in a procedure qualified to AWS D12.1.
2. The welding procedure used is comparable to an approved AWS D12.1 procedure and the welder was qualified to the same procedure. Also, a review of the welder's previous qualifications indicates that the rebar and plate that he actually welded are of essentially the same chemistry as the materials he was qualified to weld.
3. Documentation indicates that a visual inspection was performed for these rebar welds indicating that surface cracks or discontinuities were not present.



4. Initially, embedment plate PB-37 was designed to resist 405 kips pullout load due to various loading combinations. The actual pullout load to be resisted by this plate is 336 kips for the worst loading condition. Eight No. 14 rebar welded to the plate can provide a maximum pullout capacity of 704 kips. Therefore, the welds in question will not be stressed to full design load. Design calculations of the plate indicated that maximum pullout load on any single No. 14 rebar will be 31.4 kips for the worst loading condition, which is far less than the allowable load of 88 kips.
5. To further assure the adequacy of the welding procedure used, three sister splices were prepared and tested for tensile stress, using the aforementioned ASME III procedure. All three developed over 87 ksi, which is more than the required 62.5 ksi. The failure occurred in the bar and not in the weld in all three cases.

#### Analysis of Safety Implications

It has been determined that this was not a reportable deficiency since it could not have adversely affected the safety of operations of Nine Mile Point Unit 2 plant had the welding deviations remained undiscovered. The basis for this conclusion is the above evaluation of the welds which shows that the welds are acceptable as is and that this particular type of welding was limited to the eight rebar welds.

Although it is uncertain whether future problems of this type (i.e. failure to resubmit unacceptable procedures for engineer's approval in a timely matter) could have adversely affected the safety of operations of Unit 2, corrective actions, as outlined below, are being taken to prevent recurrence of a similar problem in the future.

#### Corrective Action to Prevent Recurrence

The welding was performed to an improper procedure because the documentation governing the use of weld procedures for this contractor had not been resubmitted for Stone and Webster engineer's approval and in turn was not made available to the welders at the site.

Consequently, a training session was held in November 1980 for Stone and Webster project engineering personnel on the procedure related to processing vendor documents. This was done to remind personnel that vendors must resubmit "approved as revised" and "unacceptable" documents in a timely manner. A project audit will be held during the first quarter of 1981 to verify project compliance with the procedure in this area.

