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SUBJECT: Forwards description of facility program for resolving issue
 of seismic qualification of drywell steel & Criteria
 BFN 50 C 7100, "Detailed Design Criteria for Structural
 Acceptance of Drywell Access Platforms."

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TENNESSEE VALLEY AUTHORITY

CHATTANOOGA, TENNESSEE 37401

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MAR 10 1988

U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
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Gentlemen:

In the Matter of)
Tennessee Valley Authority)

Docket Nos. 50-260

BROWNS FERRY NUCLEAR PLANT (BFN) - SEISMIC QUALIFICATION OF DRYWELL STEEL

This letter describes the BFN program for the seismic qualification of drywell steel. This letter supplements the information provided by section III.3.8 of revision 1 to the Browns Ferry Nuclear Performance Plan that was transmitted by S. A. White's letter dated July 1, 1987.

Enclosure 1 to this letter describes the BFN program for resolving this issue. Enclosure 2 provides the BFN drywell steel interim operability criteria. TVA requests your review of this program and the issuance of a written statement documenting the programs acceptability.

Please refer any questions regarding this submittal to M. J. May, Manager, BFN Site Licensing, (205) 729-3570.

Very truly yours,

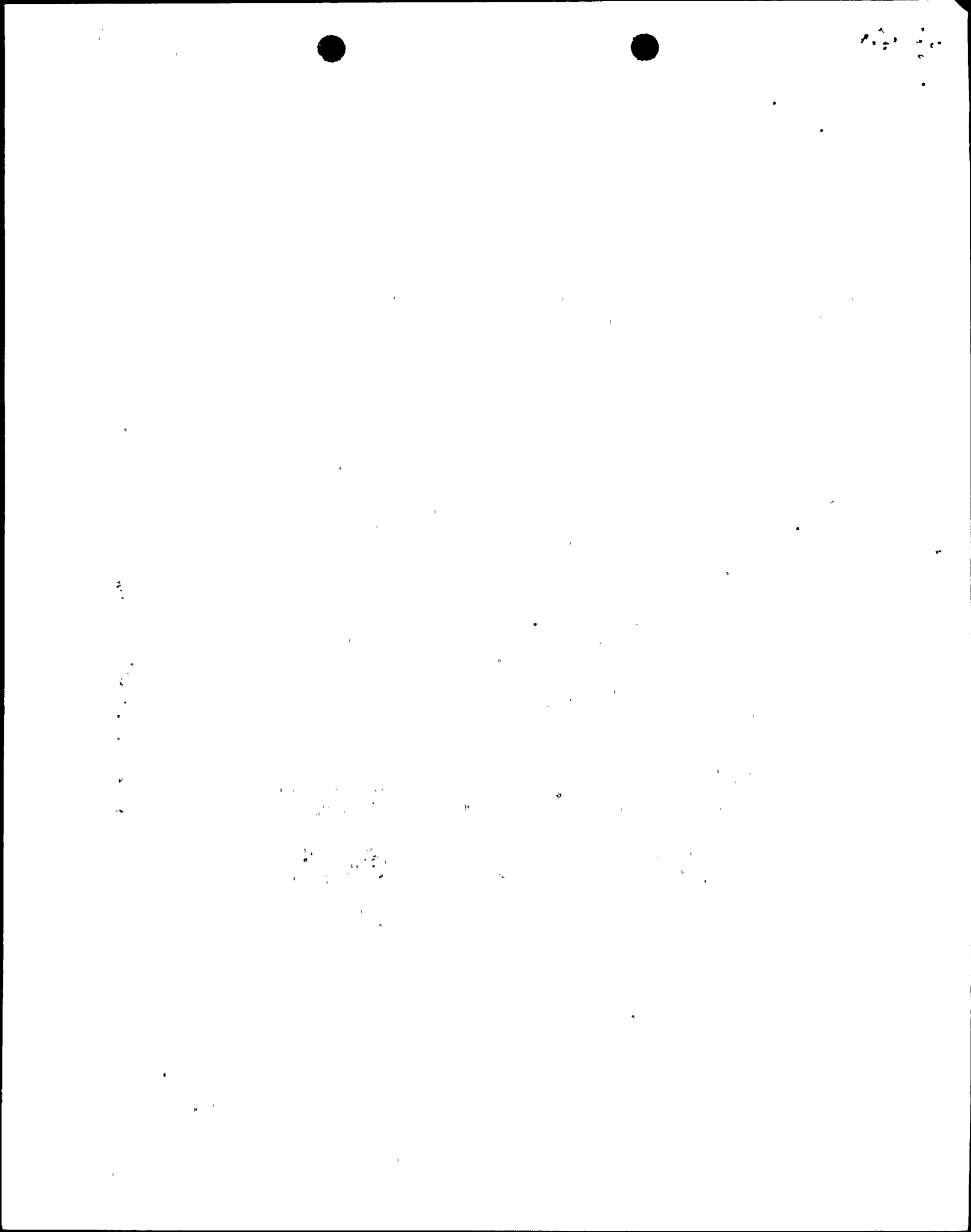
TENNESSEE VALLEY AUTHORITY

R. Gridley
R. Gridley, Director
Nuclear Licensing and
Regulatory Affairs

Enclosures
cc: See page 2

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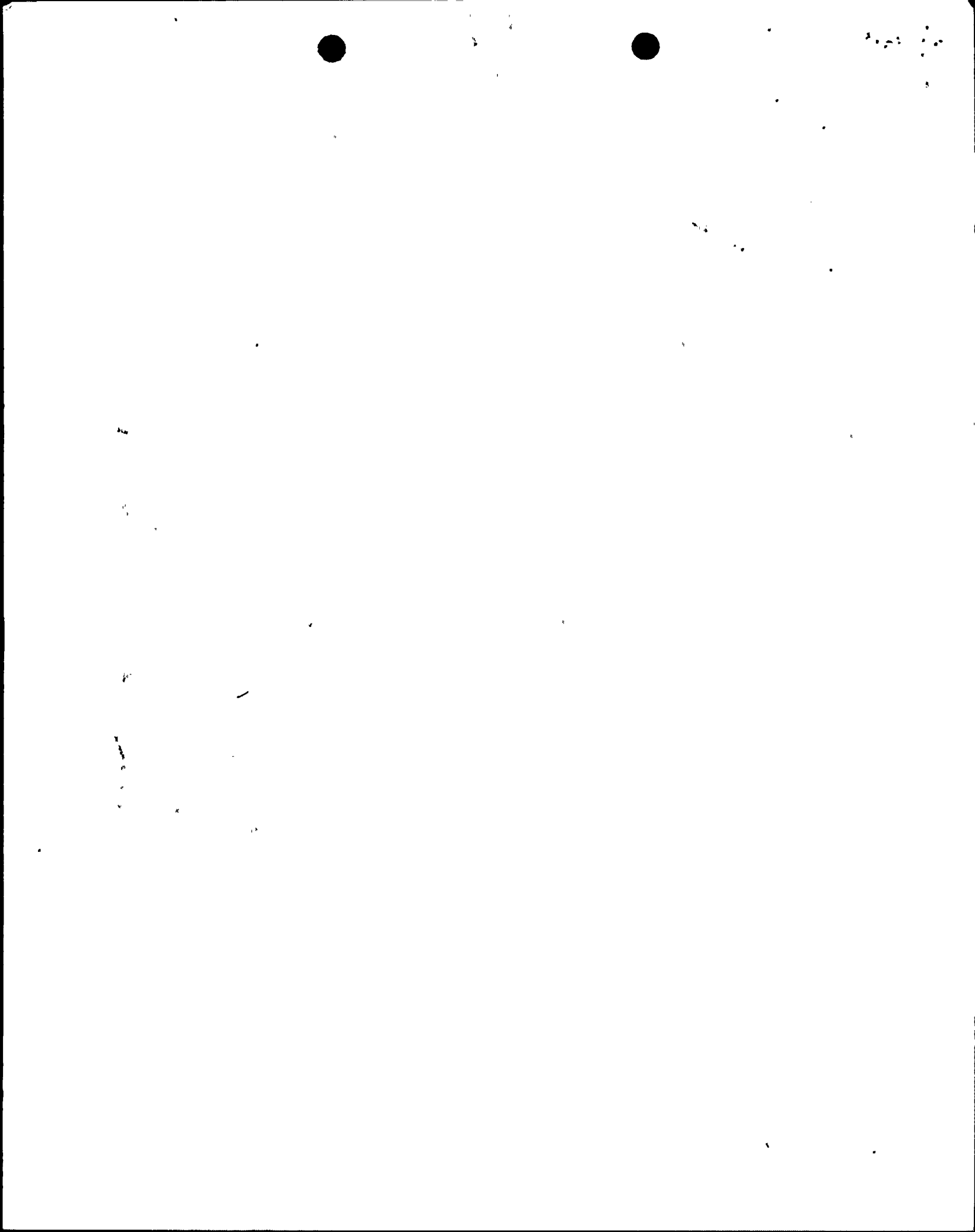
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cc (Enclosures):

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Enclosure 1

TENNESSEE VALLEY AUTHORITY BROWNS FERRY NUCLEAR PLANT UNIT 2 DRYWELL STEEL PLATFORMS

This report gives TVA's plan to demonstrate the adequacy of drywell steel platforms.

Issue

A nonconforming condition report identified an unanalyzed attachment to one of the lower drywell platforms. Investigation showed this to be part of a generic problem for all drywell platforms.

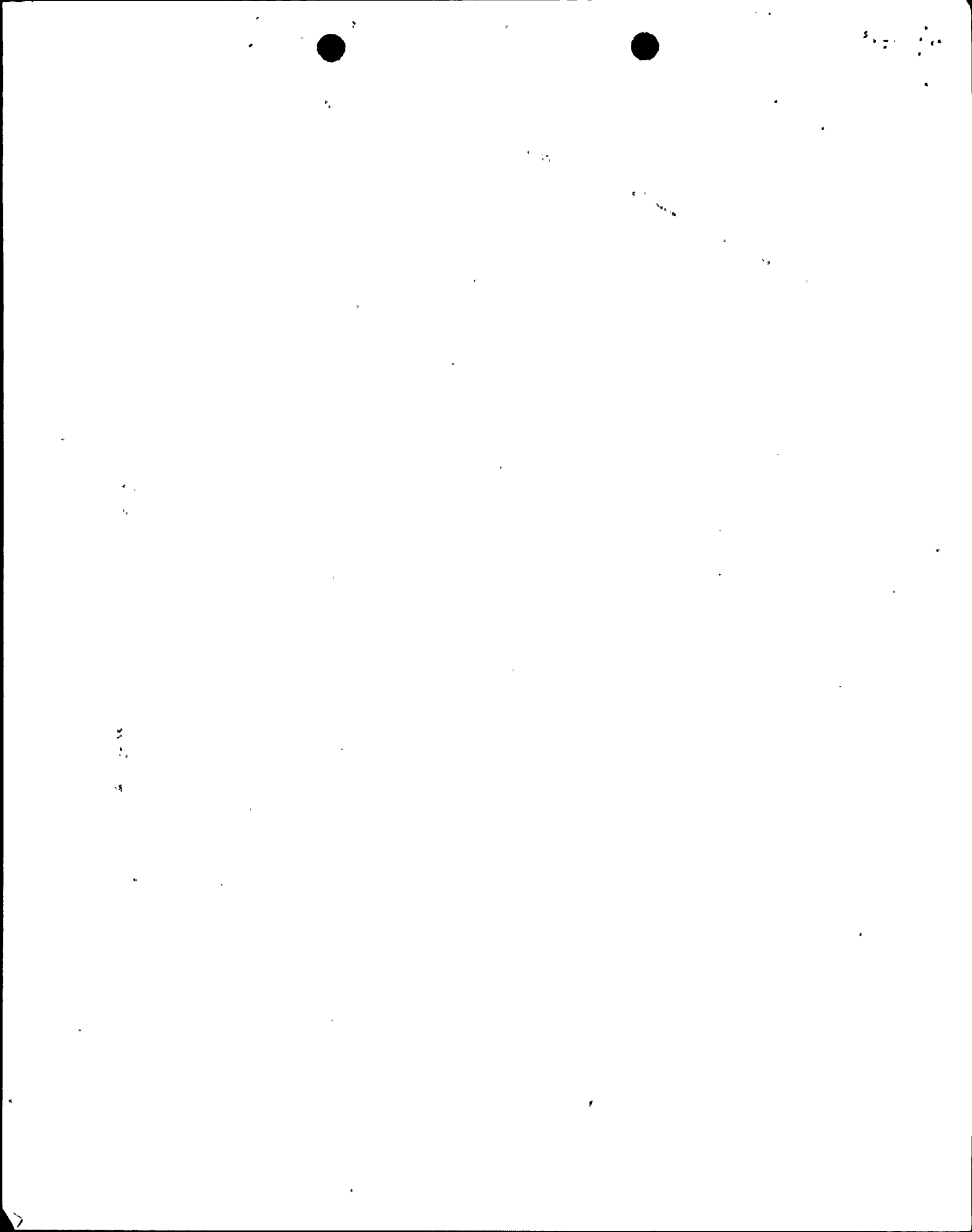
Background

While dispositioning nonconforming condition report BFN-BWP-8309, the following was determined: Drywell floor framing steel at elevations 563' and 584' had not been reevaluated for some loads which were added or revised since the original design, structural behavior of platforms under combined loadings was not completely evaluated and documented, and some configurations did not match drawings. Additional findings were later identified in SCR BFN CEB 8634, 8640, and 8643 on platforms at elevations 604', 616', and 628'.

Resolution

To ensure the adequacy of drywell steel platforms, the following plan was implemented:

1. A detailed walkdown of all drywell platforms was performed to document the as-built configuration.
2. Detailed analysis of each platform was performed using the GT-STRUDL program. The model included primary as well as secondary steel that supports piping systems and cable trays. All support loads considered were the maximum values for OBE and DBE load conditions. Resulting stresses were compared to an interim Operability Criteria based on the AISC code. The allowables are summarized in Table 1.
3. Modifications are necessary to meet the interim operability criteria on secondary steel beams and connections and are mainly due to safety relief valve piping loads. Additionally, stiffener plates are being added to reduce the local stresses in beams at attachment points.
4. Additional modifications will be made to correct installation problems observed during the walkdowns.
5. All modifications necessary to meet operability criteria will be made before restart of unit 2.



6. The FSAR requires that the drywell steel platforms remain functional for loads due to the platform weight and all attachment loads. Specific stress allowables are identified in FSAR Table 12.2.16. These commitments are reflected in the design criteria for drywell steel platforms.

The drywell platform design will be brought up to the FSAR commitment postrestart incorporating final pipe support attachment loads consistent with the schedule for completion of the program to resolve IE Bulletin 79-14. Modifications required to meet design criteria will be implemented before restart following the next refueling outage.

To ensure the structural adequacy of drywell platforms for future attachments, a long-term program has been established to monitor and evaluate new attachments.

Licensing Issue

The Interim Operability Criteria used to determine the structural adequacy of drywell platforms allows 1.6 times the capacity 'S' based on the AISC code, instead of the FSAR stress limits of 0.9Fy.

Justification

The use of the Operability Criteria on an interim basis is considered justified because of the following:

1. The interim operability criteria minimizes the modifications in highly congested radioactive areas now, while maintaining adequate industry accepted safety margins.
2. The long-term program provides for updating the designs for the latest loads, resulting from the 79-14 program, and meeting the FSAR requirements.
3. The operability criteria is based on Standard Review Plan 3.8.3, which has been accepted for use on other nuclear power plants.

The drywell steel qualification program is comprehensive and assures the structural adequacy of the drywell steel platforms.

TABLE 1
DRYWELL STEEL PLATFORMS
CRITERIA COMPARISON

	<u>DESIGN CRITERIA</u>	<u>INTERIM OPERABILITY</u>	<u>REMARKS</u>
Steel Allowable Tension, Bending Stress	up to 0.9Fy	1.6 X AISC	BASED ON SRP
Steel Allowable Shear Stress	up to 0.4Fy	1.6 X AISC	BASED ON SRP
Weld Allowable Shear Stress	up to 0.4Fy of Base Metal	1.6 X AISC	BASED ON SRP
Concrete Anchor Factor of Safety Wedge & Shell Type	Wedge Type 4 Shell Type 5 for Tension 4 for Shear	All Types 2	SIMILAR TO PIPE SUPPORT OPERABILITY CRITERIA

Enclosure 2

Browns Ferry Nuclear Plant Drywell Steel Interim Operability Criteria

