

DEFERRED VERIFICATIONS

A Report by Sam A. Milam III

July 11, 1983

## DEFERRED VERIFICATIONS

### Disclaimer

This report is based on my experience in GE's Control & Instrumentation Department, in San Jose, California. My last day of employment in the Control & Instrumentation Department was April 30, 1982. The information presented in this report may be affected by subsequent changes within the Control & Instrumentation Department of which I am unaware.

# DEFERRED VERIFICATIONS

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## DEFERRED VERIFICATIONS

### Introduction

In this report, I have addressed the practice of deferred verifications within the Control & Instrumentation Department (C&ID) of the General Electric Company's nuclear energy business, headquartered in San Jose, California. What I have presented is based on my personal observations and activities and is intended to provide information which might lead to the resolution of the deferred verification problems described herein. Where appropriate, I have included pages from applicable procedures, and items from my personal work record. Cross references which appear on work record items were originally used for tracking within the work record. Such referenced items are not necessarily included in this report.

## DEFERRED VERIFICATIONS

### The Requirement

Design verification requirements are established by 10 CFR 50, Appendix B, and apply to safety related structures, systems and components. All designs for such structures, systems and components, including both initial designs and design changes, require formal design verification. This requirement is implemented within C&ID by procedures which require that verification of the design (or design change) must be complete before the controlling documents can be issued. Deferred verification is an exception. When a deferred verification is performed, the required verification activities are postponed until some time after the formal issue of one or more controlling documents. Administrative control of deferred verifications must assure that

1. every document which has a deferred verification is so identified,
2. every deferred verification is eventually completed, and,
3. completion of verifications which have been deferred is as rigorous as the completion of normal verifications, including traceability to and retrievability of verification records.

## DEFERRED VERIFICATIONS

### Design Documents

Controlling design documents (drawings, specifications, etc.) are issued within C&ID by engineering review memoranda (ERM's) and changed by engineering change notices (ECN's). When a new issue or a change involves a deferred verification, the ERM or ECN shows this to be the case. However, no such indication appears on the affected design document. Instead, a record of deferred verification is made in the Engineering Information System (EIS), described next. The record of deferred verification is made in EIS by the use of a Design Verification Status Change Notice (DVSCN). The record of deferred verification can be removed from EIS by another DVSCN. Figures 1 and 2 show simplified issue and change cycles.

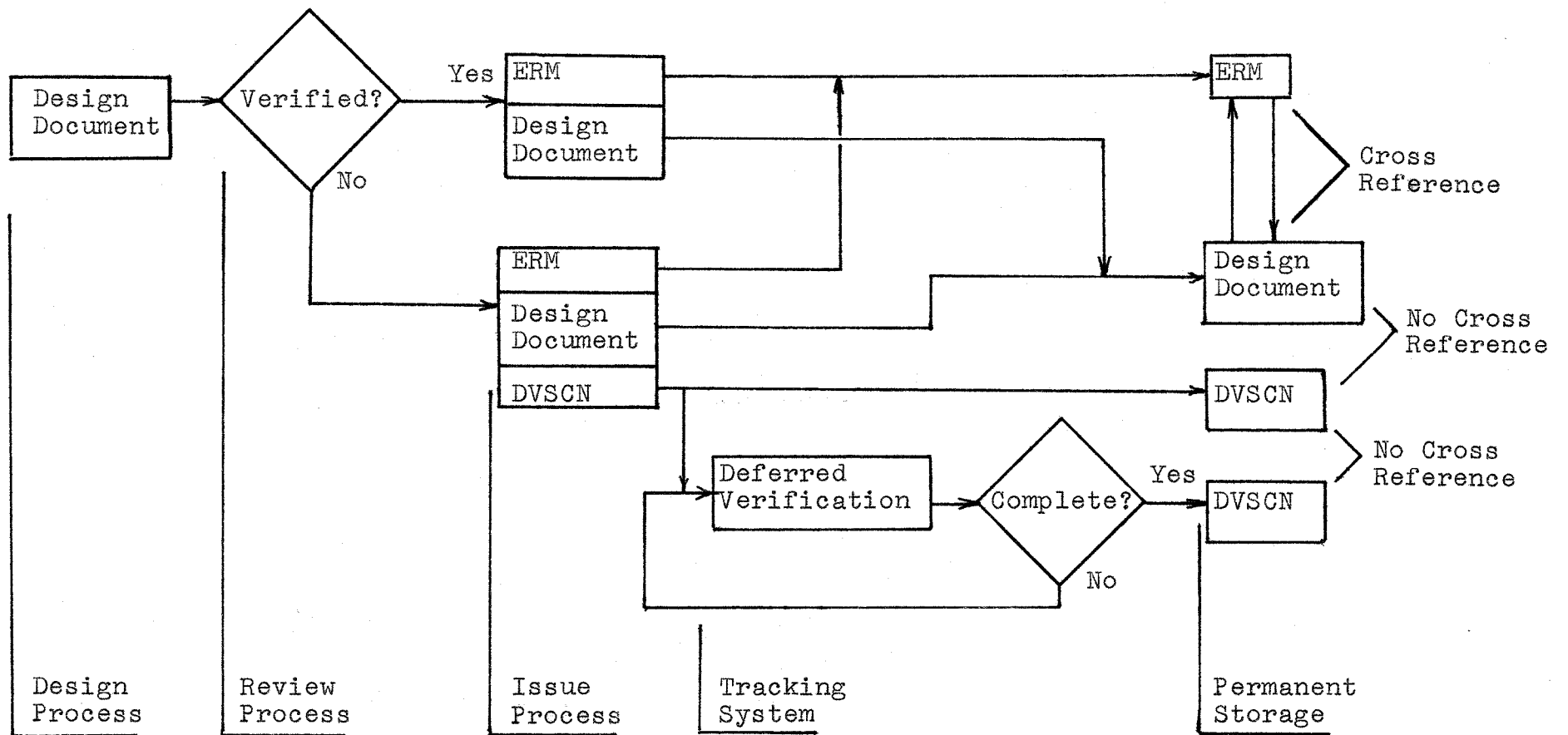


Figure 1. Simplified Issue Cycle

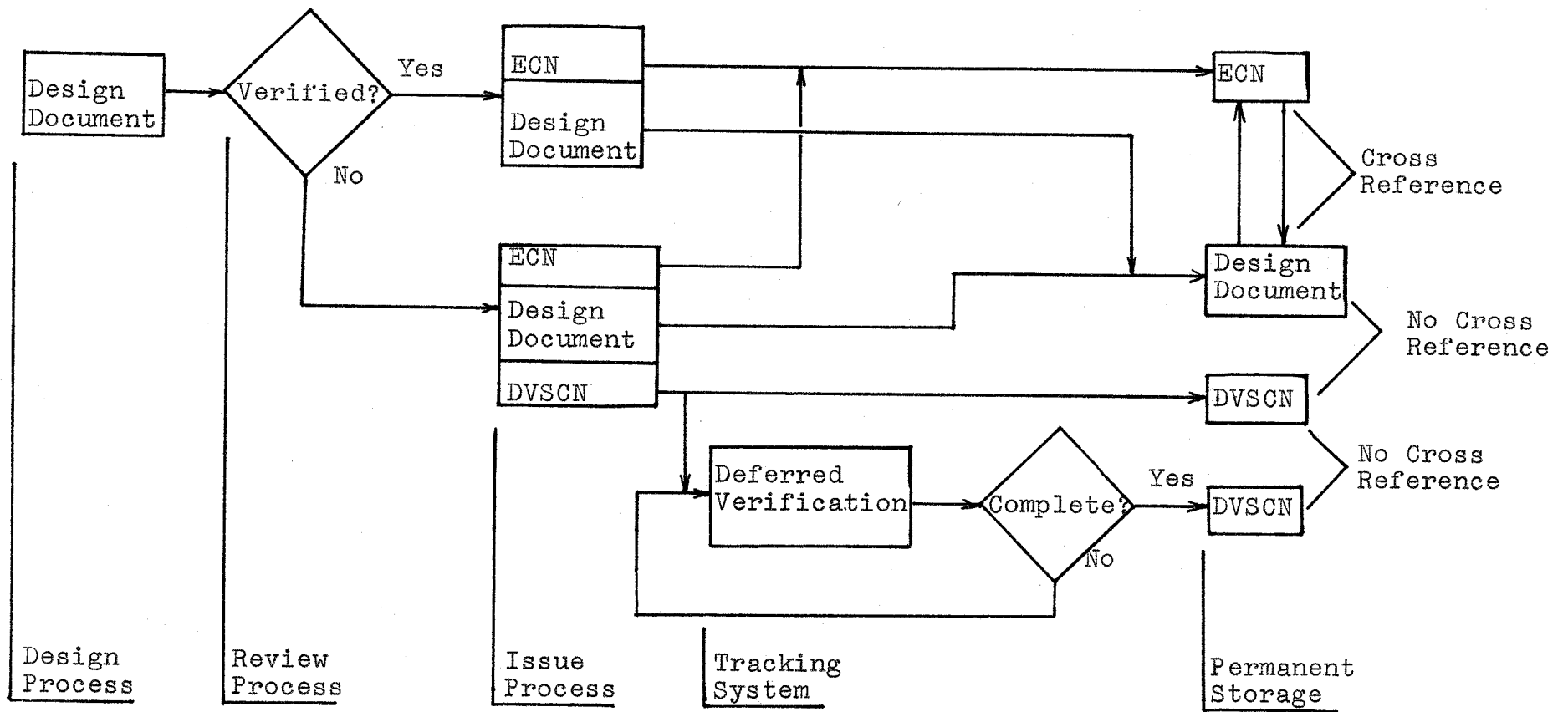


Figure 2. Simplified Change Cycle



## DEFERRED VERIFICATIONS

### The Engineering Information System

The Engineering Information System is a computerized data storage system which can be used to retrieve engineering documentation information, cross referenced in a variety of different ways. The system is useful for determining current document status and application information. However, the data is not revision controlled, nor is old information retrievable from the system because old data is destroyed when the data base is updated.

## DEFERRED VERIFICATIONS

### Deficiencies

Following is a list of the deficiencies that I have discovered in the control of deferred verifications. With each deficiency I have shown a possible corrective action.

## DEFERRED VERIFICATIONS

### Deficiencies

Verification status is not shown on the controlling design documents. Display of document status information is controlled by the Engineering Documentation Practices Manual, Section C1, shown on the next page. Although verification status is available in EIS and on the various change documentation (ERM's and ECN's), requirements (and common practice) do not always include searches for verification status when documents are used. Thus, the documents are routinely used without any interest in their verification status. Examples I have seen include:

1. use of unverified documents as source documents for changes in other controlling design documents.
2. production and shipment of hardware whose design included unverified documents.
3. technical review of Final Safety Analysis Reports using unverified documents.
4. responses to customer and NRC questions using unverified documents.

RESOLUTION - This deficiency could be resolved by showing the verification status on the design document.

COMPLETION STATUS CODES

1. PURPOSE.

1.1. This documentation practice establishes the procedures to be followed for the use of Completion Status Code symbols on documents and in the Engineering Information System (EIS).

1.2. For background information on EIS see the EIS User's Manual, NEDE-24563, and EOP 30-4.00, Engineering Information System.

2. SYMBOLS.

2.1. ICER Symbols For Use on Documents and in EIS.

I - Incomplete for internal reasons (awaiting GE input)

C - Complete

E - Incomplete for external reasons (awaiting Customer or Supplier input)

R - Incomplete for both internal and external reasons.

2.2. SUN Symbols For Use in EIS But Not on Documents.

S-- Incomplete document (no work planned)

U-- Unverified or deferred design

N-- Not evaluated (entered in EIS before implementation of Completion Status Code)

3. PROCEDURE.

3.1. Drafting, Specification, and Standards.

3.1.1. Identify each product drawing, specification, and separate parts list authorized for issue or application with a symbol that indicates the completion status of the document.

- a. Use the applicable symbol from the list in paragraph 2.1
- b. Add or change the symbol as necessary to reflect the document status.
- c. Place the symbol on the first sheet of the document. See Figure 1.

3.1.2. Completion status symbols are not used on sketches or on Master Parts Lists.

3.2. Plant Definition and Advanced Systems Development.

3.2.1. Enter the I, C, E, or R symbol shown on the document authorized for issue or application into EIS when no restraints exist.

3.2.2. When an incomplete (I, E, or R) document is identified by the Responsible Engineer as one for which no work is planned, enter an --S-- as defined in paragraph 2.2. into EIS. The completion status code (I, E, or R) on the document will not be changed.

3.2.3. When a document is identified on an Engineering Review Memorandum or Engineering Change Notice as an unverified or deferred document, enter a --U-- as defined in paragraph 2.2 into EIS. The completion status code (I, C, E, or R) on the document will not be changed.

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## DEFERRED VERIFICATIONS

### Deficiencies

When an ERM is written to issue a document with a deferred verification, the necessary accompanying DVSCN (see the procedure shown on the next page) is often not written. Thus, the record of deferred verification is not made in EIS. When an ECN is written to make a design change with a deferred verification, the necessary accompanying DVSCN is often not written. Again, the record of deferred verification is not made in EIS. Without this record, the deferred verification is not visible and the possibility exists that it will be forgotten and never completed.

NOTE - Efforts within C&ID to track completion commitments for deferred verifications in such systems as the Work Planning and Scheduling System (WPSS) and the Nuclear Engineering Management System (NEMS) have not succeeded in assuring completion of deferred verifications, particularly when commitments are for the completion of deferred verifications which cannot be found.

RESOLUTION - If the verification status shown on the ERM or the ECN was recorded on the design document itself, the accompanying DVSCN and resulting EIS entry would not be necessary. EIS could be updated for information only, if desired, from either the ERM, the ECN, or the design document.

## ENGINEERING OPERATING PROCEDURE

EOP 42-6.00

## 4.1.2 Deferring Verification

- a. When verification is deferred until after design document issue due to incomplete design or other reasons, state on the ERM/ECN issuing or applying the document or on the Design Verification Status Change Notice required by Paragraph b., below:
1. That verification is deferred
  2. The reason for deferral
  3. A schedule for performing the verification
  4. The DRF reference if applicable
  5. The signature of the Responsible Engineer's Section Manager authorizing deferral
- b. Notify Engineering Services 1 by processing an accompanying Design Verification Status Change Notice (DVSCN) form that identifies the document, the scheduled date of deferred verification completion, DRF reference if applicable, and distribution identical to that of the issued document.
- c. When verification is deferred for designs to be released, initiate releases per EOP 42-5.00, Engineering Requirements Document Release.
- d. Assure that verification is completed in accordance with the schedule committed, following the requirements of Paragraphs 4.1.1a through 4.1.1f.
- e. When deferred verification is completed, notify Engineering Services 1 by processing a DVSCN form that identifies the verified documents, DRF containing verification, completion date, and distribution identical to that of the issued document.

## 4.1.3 Performing Additional Verification

- a. When additional verification is required after document issue or application, advise Engineering Services 1 to revise the verification status of the document to "unverified" by processing a DVSCN that identifies the document(s), completion date, Section Manager's endorsement and distribution identical to the issuing ERM/ECN.

AUTHORIZED BY DIVISION GENERAL MANAGER	ISSUED 4/30/81	SUPERSEDES 4/4/80	EFFECTIVITY 4/30/81	PAGE 5 OF 12
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SAM

## DEFERRED VERIFICATIONS

### Deficiencies

Design documents are often used without reference to EIS. In fact, many users (for example, subcontractors, or users in the field) might not even have access to EIS. Thus, even if the verification status is correctly shown by EIS, it may not be known to the user.

RESOLUTION - This deficiency would be resolved if the verification status were shown on the document itself.

## DEFERRED VERIFICATIONS

### Deficiencies

The EIS data is not revision controlled. Previous EIS data is not retrievable because old data is destroyed when the data base is updated. Since EIS is the intended means for tracking deferred verifications, the history of the verification status of a document is difficult to reconstruct.

RESOLUTION - A permanent record, showing the verification status of each revision of a document would be easily retrievable if the verification status were shown on the document itself.



## DEFERRED VERIFICATIONS

### Deficiencies

The record of deferred verification can be removed from EIS by the transmittal of a DVSCN. The DVSCN needs only the signature of the responsible engineer. No verifier signature or other evidence of independent design verification is necessary. Thus, it is possible to remove the record of deferred verification from EIS without any verification having been done.

RESOLUTION - This deficiency could be resolved by requiring the DVSCN to show evidence of review equivalent to that shown on an ERM or an ECN before the DVSCN could be used to remove a record of deferred verification.

## DEFERRED VERIFICATIONS

### Deficiencies

No traceability exists from a document with a deferred verification to the DVSCN which is used to show completion of the verification. Thus, given a document with a deferred verification, it is not possible to show that the verification has been completed, even if it has.

RESOLUTION - When a deferred verification is completed,

1. give the DVSCN the same number as the ERM or ECN which created the deferred verification, and
2. file the DVSCN in Document Control with the ERM or ECN for which it was written.

Since the document with the deferred verification already refers to the ERM or ECN, this will establish traceability to the completion record.

## DEFERRED VERIFICATIONS

### Resolution Efforts

I am one of many people to be involved in the effort to resolve the problems associated with deferred verifications. Following is a list of documentation which indicates the extent of the effort.

# GENERAL ELECTRIC

CONTROL & INSTRUMENTATION DEPT.

QUALITY ASSURANCE  
SAN JOSE, CALIFORNIA

March 19, 1982

SUBJECT: Synopsis of events in the Engineering Deferred Verification, Conditional Release and Qualification/Dedication Programs.

A review of the files in this office on above subject items provides a lengthy and complex history trail of events which are capsuled into chronological order as follows:

1. July 19, 1976 - Letter from L.D. Test (NC&ID Engineering) to J. Ward (Manager QA NC&ID) identified that QA was responsible only for the product meeting the design and Engineering was responsible for the design adequacy prior to issue. He recognized the deferred verification problem and advised that Dave Lee would review engineering procedures. Also NC&ID Engineering would assign dates compatible with shipping requirements and monitor for conformance.
2. August 9, 1976 - Letter from D.C. Brown to J. Ward documents a meeting of August 5th with D.E. Lee, B.J. Beach and D.F. Long. Several points were established but most important were as follows:
  - (a) Engineering was now keeping track of all deferrals;
  - (b) A new EOP was in process;
  - (c) Procedure for clearing needed improvement;
  - (d) NC&ID was to continue present shipping practice;
  - (e) Ben Beach had assignment to follow up with an action plan.
3. January 1977 (approximately January 25th) a meeting of J. Ward and D.C. Brown was held with D.F. Long, D.E. Lee where subjects of deferred verification, engineering interchangeability and product quality certification of engineering work were discussed. Jim Ward's notes on the letter prepared for this meeting indicate that we were to "back off a little" on our request for status information by February 15th. General outcome of the meeting was that they would continue to pursue all three subjects.

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Re: Conditional Releases

4. April 21, 1978 BWR Quality Council - John Barnard identified an item "Control of Products Produced to Unverified Designs (78-2-1)." He expressed concern on the subject of conditional releases and required letter reports from C&I, Wilmington and EEPO QA organizations be transmitted to Council by May 18, 1978 as to controls in place for such items.
  - (a) J.K. Powledge responded on April 28, 1978. His main points were (1) In a review with D.F. Long it was agreed that systems to control shipments on unverified designs did not exist in NEED. (2) The Design Engineers must have positive and contractual means to prevent shipments until he has accomplished the design verification.
  - (b) T. Duke (acting for R. Robinson) signed a letter prepared by D.C. Brown on May 8, 1978 which had main points as follows:
    - (1) There was not a system in place in Manufacturing and none should be required.
    - (2) The Engineering Control System should provide the follow-up to assure the completion of required Engineering work.
    - (3) If further Engineering communication is required on such items then EI's or FDI's should be used as appropriate.
  - (c) May 11, 1978 - Alex Kaznoff letter to R. Robinson referred to the May 8th letter and quoted the requirement of EOP 40-5.00 that conditional released items shall not be shipped until verification is complete and said that Manufacturing must have a system for handling unverified designs.
5. May 25, 1978 - Letter to Anders, Long, Rubio and Stone from Barnard documents an agreement of a May 25th meeting for NEED Engineering Services Operation to provide to NC&ID (for Farmount) all of the detailed services assigned by EOP 40-5.00 for the balance of 1978. To be reevaluated in October 1978 for 1979.
6. June 9, 1978 - Letter from H. Hendon to C&I Engineering Unit Managers advised that audits disclosed that the conditional release requirements of EOP 40-5.00 and Group Instruction 70-11 were not being met. He directed that:
  - (a) "Conditional release" be identified on EI's for incomplete or deferred verification designs.
  - (b) Include QA Subsection Managers on "conditional release" distributions.
  - (c) Issue amending EI's by July 15, 1978 for all releases made since Sept. 29, 1977 marking "conditional" where applicable.
  - (d) Remove the "conditional" when completed, clear with projects, commit date and obtain written shipping approval when not completed. Provide QA with approval and assist with PQC if requested.
  - (e) Establish a date for each Conditional EI and enter into WPSS.
  - (f) Contact L.D. Test with any questions.

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Re: Conditional Releases

7. June 19, 1978 - Letter from D.C. Brown to D.H. Ferguson recommended a change to MP 5.06 to utilize the CMR to control conditionally released items and recommended that MP 5.10 be revised to provide for a conditional purchase order with hold points at suppliers facility or elsewhere to control release of items.
8. June 28, 1978 - Letter from R.F Hennessey (Engineering Services Operation) to H.H. Hendon and C&IE Subsection Managers advising of an audit of the deferred verification system to be held June 30th and July 5th.
9. July 18, 1978 - Letter from H. Hendon to A. Rubio responding to a request to describe the procedures which assure that design verifications are closed out prior to start up. He relied on the following: (a) ERM issue, (b) WPSS Schedule, (c) "Conditional Release" EI, (d) Audits, (e) Change to EIS System by Sept. 15, 1978 to track to highest MPL number.
10. August 1, 1978 - Quality Control Report (unsigned but from Bob Hennessey and Lou Test and obviously a draft copy) shows results of audit of 27 deferred verifications. Contained many recommendations for action and particularly in EIS. Indication was that EIS would correct this in early 1979. In the interim it recommended distribution of the deferred verification WPSS run to the Engineering Release Group in Engineering Services and to QA in NEED and NEPD.
11. August 7, 1978 - Letter from H.Hendon to D.H. Ferguson advises that Engineering intends to continue to have the responsible engineers who prepare the EI's assure that the documents released are verified and complete and to follow EOP requirements. However, he also said that D. Long's people had agreed to modify the Engineering Information System to show at both the document level and ship-pable MPL level the status of verification. They committed to have this in place FW 7837. Hendon also said that Rubio agreed with this but was concerned that it did not force closure. Hendon proposed that QC check EIS prior to PQC preparation (for completion of verification).

(D.H. Ferguson's note on this letter was that this should be a Materials responsibility and QA would audit the work of Materials).

August 14, 1978 - A handwritten note from D.C. Brown to Don Ferguson also said that the check of EIS before shipment should be done by Materials and QA should check on Materials to see that it was done. Also questioned if this would cover the mechanical areas and procured items.

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Re: Conditional Releases

12. August 11, 1978 - Letter from L.D. Test distributed Engineering Requirements Release Procedure EOP 42-5.00 which included coverage of conditional releases. On August 14, 1978 John Crepean responded with specific changes particularly relative to the Materials organization's responsibility for initiating Conditional Material Releases.
13. August 15, 1978 - Letter from D.E. Lee to NEED and C&I Engineering Section Managers covering NRC inspection unresolved items on Design Record Files either not dated, not signed, etc.

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14. August 24, 1978 - Letter from D.H. Ferguson to J.W. Mogge (Manager - Materials) provided background information on conditional releases and indicated need for Materials action and decisions on how to implement conditional EI's. No system in Materials. Proposed use of Conditional Material Release. Advised him of possible PRD implications.
15. August 30, 1978 - Letter from C.D. Magrath (Engineering Services Operation) to L.M. Downes (Manager- NC&ID Control Room Programs) proposed actions for control of conditional releases on farmout programs.
16. September 1, 1978 - Letter from D.C. Brown to Barrentine, Ferguson, Lee and others documenting a Deferred Verification Meeting of 8/20/78. Several desires and limitations itemized relative to EIS System. Different views between Engineering and Materials on acceptability of conditional release EI's, top to bottom level traceability in EIS System and WPPS/EIS System interfaces. Linville (Materials) was to check on how to comply with NED Instruction 70-11 Section C a part of which says "Design verification shall be completed prior to operational use -----etc." D. Lee was to make a trial run of an example EI in the WPPS/EIS system. "Engineering Certification" form was attached to this letter.
17. September 5, 1978 - L.D. Test responded to D.C. Brown on a mark up of the September 1, 1978 Letter (above) that Engineering Certification would not be needed because EIS would be fixed soon and he indicated by 9/15/78.
18. September 15, 1978 - Letter from D.C. Brown documenting meeting held 9/14/78 several attendees from 10th Street, Engineering, Materials, QA. Reported on results of Grand Gulf search, problems with uncleared items being elevated to highest assembly, transfer of information from WPPS to EIS. Dawley advised that WPPS was to be incorporated into EIS by FW 7838. Lou Test was to write a C&ID Practice and Procedure and Gerry Ross has documented a proposed farmount system.
19. December 18, 1978 - Letter from Nick Lamberti to QCEP Supervisors (by name) assigning responsibility to R. Sullivan for initiating batch process list from EIS (until formal procedures are issued).

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Subject: Conditional Releases

20. December 20, 1978 - Letter from E.M. Duke to QA Subsection and Materials Subsection Managers transmits QA Notice 78N-006 "Design Verification Control of MPL Items" meeting scheduled same day.
21. February 12, 1979 - Letter from B.F. Fleischman to E.D. Linville documents agreements on responsibility of meeting held 2/6/79 as follows:
  - (a) QA covers Limerick 2, Susquehanna 2, Grand Gulf 2.
  - (b) Materials accepts responsibility to obtain evidence from Engineering that verification is complete prior to release for shipment.
  - (c) Materials to obtain Engineering signature on DTS.
  - (d) QA will perform 10% audit of design verification for all projects after Grand Gulf 2.
22. February 15, 1979 - Letter from D.A. Arnold documents agreements with Stonebraker and Barnard on design verification on spare and renewal parts. Letter from John Barnard of March 7, 1979 interprets training requirements for non QA personnel performing quality checking work.
23. March 15, 1979 - Letter from D.C. Brown to J. Mogge requested that Materials put in place the procedures to implement the decisions of the Fleischman/Linville 2/6/79 meeting. Follow up notes show that as of 5/1/79 nothing had been done by Materials.
24. March 27, 1979 - Letter from John Barnard to D.H. Ferguson provides interpretation of 70-11 requirements for design verification prior to shipping and the level of products requiring verification (piece part, assembly, etc.).
25. August 4, 1980 - Letter from B.J. Beach to W.M. Barrentine (referencing PRC 80-31) provides results of investigation of errors in Engineering/Drafting relative to ICER codes. Problem is not unique to one situation. Eleven other similar cases. Recommends corrective action in PDE by use of DVSCM and checks at shipping release of parts list.
26. August 8, 1980 - Letter from W.M. Barrentine to D.F. Long (referencing PRC 80-31). W.M. Barrentine considers B.J. Beach letter of August 4, 1980 as unacceptable. Appoints Marklein to work with D.E. Lee. In the event it cannot be solved then Barrentine and Long should work it. Intent is to identify and track conditional released equipment.
27. August 12, 1980 - Letter from Barrentine to Marklein identifies conflicting manner in which members of D.F. Long are handling conditional releases and instructs Marklein to determine corrective action, conceive a system, give directions to D.E. Lee, formalize results and give a plan and schedule to Barrentine no later than August 19, 1980.



March 21, 1982

Re: Conditional Releases

28. September 22, 1980 - Letter from P.M. Briggs to D.H. Ferguson on P&QA0 CAR # P8005-6 and J. Wilson's proposed conditional release shipment control system. He concluded that:
- (a) Total scope of past items unknown.
  - (b) Projects has no tracking system.
  - (c) EIS requires modification before it can carry complete status information.
  - (d) QA and Materials are not in the loop after shipment except for specific FDI/FDDR action.
  - (e) Wilson's system proposes MFAT as integrator for catch up.
- 
29. September 24, 1980 - Letter from Parker to Briggs. Disagrees with Briggs calls it "hogwash". Obvious difference of opinion between Engineering and QA.
30. January 15, 1981 - A note from Ed Duke to D.H. Ferguson about QA Notice and attached comments from Ben Beach on use of FDI, or PQC hold etc. Note says that per discussions with D.C. Brown and Hugh Currie that we would mortgage an FDI to cover the conditional release. This serves as the communication vehicle to the site and to the customer similar to a "ship short."
31. November 18, 1981 - Letter from Cesar Gamez to D.H. Ferguson documents conditional releases on LaSalle I and notes lack of EI commitment dates.
32. December 3, 1981 - Letter from Phil Briggs documents decisions and comments of NC&ID Compliance Review meeting held November 13, 1981. Indicated that PM&C should track, Engineering should prepare FDI's and that procedures should be revised.
33. December 7, 1981 - Letter from W.M. Barrentine to D.H. Ferguson says that the claimed violation of EOP 42-5.00 in C. Gamez letter of 11/18/81 is false. Dates required only "if known".
34. December 14, 1981 - Letter from Gamez to Brown points out that EOP 42-5.00 is in conflict with itself because it also says an EI schedule is a minimum requirement.
35. January 19, 1982 - Letter from D.C. Brown to D.H. Ferguson identified several problems and actions triggered by LaSalle but which lead to revision of EOP 42-5.00, identification of material, tracking system in Engineering and specific qualification of general use items.
36. March 15, 1982 - Letter from Gamez to Brown identifies specific action taken on the January 19th letter. Generally all items solved or being worked on. Will require further follow-up. However, Dave Lee has had the EOP changed to remove the option of providing the date only "if known." (See item 33 above)

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March 21, 1982

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Re: Conditional Releases

Other

In addition to the above, I also have on file the following:

- (1) On October 23, 1978 a letter from Duncan to Ferguson relative to 10CFR 21 shipments. We returned to a normal mode of operation on that date.
  - (2) A list of P&QAO CARS on this general subject from Norman Barclay.
-

## DEFERRED VERIFICATIONS

### Resolution Efforts

While employed in C&ID, I informed my management of each deficiency that I discovered, and proposed the various resolutions. No serious corrective action resulted from my efforts. Following are some examples, which are taken directly from my work record.

Work record for week 8021  
Sam A. Milam III

4. This is based on conversations with Bob Gaetani and Mike Howley. I have always assumed that an ICER code of "C" indicated a complete drawing with a complete verification. Not so. The "C" means the drawing is complete, but says nothing about verification. In EIS, if the verification is not complete the ICER code is "U", but on the drawing it will be "C". (Remember the Kuo Sheng 2 C61-P001? I think we decided against a conditional shipping release based on drawing ICER codes.) Why doesn't drafting put a "U" on drawings with incomplete verification, like EIS does?

See attached EIS output for Kuo Sheng 2 C61-P001

Work record for week 8110  
Sam A. Milam III

1. Had disagreement with George Stramback, 3-3-81. I feel that we should note the use of unverified documents to verify FSAR's. Perhaps we should even formally notify the responsible engineer that his unverified document has been used to support an FSAR quality review. George Stramback feels that the verification status of the design documents that we use is not important to us. Bob Reghitta agrees with George.
2. Completed review of Clinton FSAR section 7.7.1.3. 3-4-81
3. SNI 650 FSAR section 7.6 (RPT portion) Completed review of Recirc part of RPT. Gave package to Paul Scherer. 3-5-81, 10:30 AM

Work record for week 8121

Sam A. Milam III

1. 5-18-81, approximately 10:00  
Received call from Jim Spirakis, PE/QAO.  
He works for Alex Kazhoff and is currently auditing NS&LO. He asked many questions about glitches in both my present job and my past job (Cobler). Some things that I mentioned were:
  1. Change request problem - no formal system
  2. Use of unverified documents, NEDO's and G&K's to support FSAR.
  3. Cobler's design changes using IR's
  4. My general situation with Cobler, including appraisal
  5. My modification to the Licensing Material Transmittal form.

I requested that he exercise discretion with any information I gave him, so as not to get me fired.

He wants to talk again, but keep a very low profile.

Jim was referred to me by Al Barclay.

CONTROL & INSTRUMENTATION DEPARTMENT  
San Jose, California

September 1, 1981

9/3 EIC  
We must be aware of the accuracy of the documents we use, therefore please check this system to improve our quality JRS

TO: George Stramback

SUBJECT: Document Status

- REFERENCES:
- 1) Engineering Documentation Practices Manual, Section C1, Completion Status Codes, 8-24-79
  - 2) NEDE-24563, Engineering Information System User's Guide, December 1978

Many of our documents have been issued with deferred verification, and should be used with caution. I suggest that each document, when first used and occasionally thereafter, be checked with EIS (DI program) for verification status. Please note that the ICER code near the revision block of the document does not indicate verification status. See reference 1, copy attached.

The EIS check using the DI program will also show current revision and outstanding ECNs. For design related work, this is necessary information. Project application and MPL numbers can be obtained from the DA program. Use of this information will enhance the accuracy of our work.

*Sam A. Milam III*

Sam A. Milam III  
C&I Technical Licensing  
M/C 432 - Ext. 55151

/dc

Work record for week 8144

Sam A. Milam III

1. Received work packages for B21 FCD update for Grand Gulf, Perry and River Bend  
10:30, 10-26-81

Two Grand Gulf device lists are unverified and not so noted on Omtech documentation

Told Arnie it would take me at least two weeks to do this job. Because that would interfere with my performance of Recirc FCD work, Arnie took this job back and gave me a shorter one, High Pressure Core Spray System.  
2:30, 10-26-81

Completed Grand Gulf markup. Gave it to Huang Trinh for review. Noon, 10-29-81. She promised it back by Monday.



## DEFERRED VERIFICATIONS

### Resolution Efforts

At one point, my management instructed me to develop a method for using the C&ID NEMS work tracking system to control deferred verifications. The use of NEMS was to be in lieu of procedures which already existed to control deferred verifications. My subsequent investigations also revealed that NEMS was not operational, and probably would not be in the foreseeable future. Following are my instructions and my response, which took the form of a letter to be signed by my manager.

**GENERAL ELECTRIC**

**CONTROL & INSTRUMENTATION DEPT.**

**QUALITY ASSURANCE  
SAN JOSE, CALIFORNIA**

- cc: R.B. Cameron
- A.G. Carter
- D.R. Erie
- D.H. Ferguson
- H.W. Hendon
- W.R. Marklein
- D.H. Monfils
- H.S. Runtagh
- C.B. Skov
- D. Thistlethwaite
- R.K. Waldman

*SAM*  
*Set up method to identify*  
*on our NEMS how a check period*  
*for the FCD/IED that have deferred*  
*to the unverified document which*  
*is referenced in our DV on this*  
*FCD/IED's.*

September 4, 1981

SUBJECT: DESIGN ENGINEERING QUALITY REVIEW

TO: W.M. Barrentine, Manager  
Production Design Engineering  
Mail Code 431 Ext. 2397

*YBS 9/22/81*  
 See letter  
 from G.B. Stramback  
 to Component 913  
 Engineers, NEMS Guidelines  
 NEMS Guidelines-10/13/81,  
 October 13, 1981, filed week 8142

REFERENCE: Letter on this subject to NC&ID staff from D.H. Ferguson dated 8/18/81.

The Engineering Quality Review Team Members have established the review objectives, review subjects and schedule for this activity. They are as follows:

I. Review Objectives

There are two primary purposed for this review. The first is to investigate Engineering related problems, primarily those associated with design changes with significant impact on Manufacturing. The second is to review compliance within Engineering and directly inter-facing components on the following:

- Deferred design verification
- Qualification of Products and components
- Dedication of commercial products
- Documentation and correction of ship short deficiencies
- Correction of product deficiencies identified in the field
- Accuracy and adequacy of certification of product quality (QA Section)

The non-C&I pcrtion of problems with subcontracted designs will not be included in the review, except for the compliance portion.

The plan of the review team is to document status and improvement trend as well as problems. The role of other functions in the problems investigated will be reported when the information is readily available.

II. Review Subjects

A. The Engineering related problem review will cover such areas as:

- ECN's
- Schedules
- Engineering QC
- Floor support/communications
- Standardization
- Site/customer support

B. The compliance review will cover primarily the six subjects listed in paragraph I.

III. Schedule

Target Date

			<u>WK. Ending</u>
a. Define scope of review	A		
b. Prepare review check lists	8136	-	Sept. 6
c. Review and finalize b.	8137	-	Sept 13
d. Review kickoff meeting with W. Barrentine, D. Ferguson, Section Reps and Review Team	8139	-	Sept 27
e. Complete review	8141	-	OCT 11
f. Issue draft report for review and Engineering input of planned corrective action as appropriate	8143	-	OCT 25
g. Issue final report, with added Review Team recommendations if appropriate	8145	-	NOV 8
h. Closeout meeting	8145	-	NOV 8

Review team:

1. P.M Briggs - QA (Leader)
2. R.B. Cameron - QA
3. O.R. Erie - SED
4. C.B. Skov - QA
5. Unidentified - ?
6. Unidentified - ?



P.M. Briggs  
Principal QC Engineer  
Mail Code 242, Ext. 53712

This letter written by  
cc: Sam A. Milam III

October 13, 1981

See note, GBS to SAM, 9/22/81  
Filed week 8139

TO: Component 913 Engineers

SUBJECT: NEMS Guidelines - 10/13/81

REFERENCES: 1. EOP 42-6.00 - Independent Design -  
Verification, 4/30/81

2. The Wonderful World of NEMS (unissued,  
copy attached)

3. NEMS PD Planning Sheet (copy attached)

Purpose

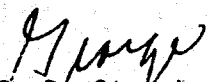
1. Make a visible record of each deferred verification.
2. Designate responsibility for closure of each deferred verification.
3. Indicate expected date of closure of each deferred verification.
4. Provide periodic reminder for the engineer who is responsible for closing the deferred verification.

NOTE: NEMS schedule completion does not constitute an auditable record of deferred verification closure. See EOP 42-6.00, paragraph 4.1.2d and 4.1.2e. When performing a deferred verification, compliance with EOP 42-6.00, paragraph 4.1.2 is required. This is in addition to these guidelines.

Guidelines

NOTE: These guidelines are in effect while the word processor NEMS is in use. When we begin using the computer NEMS, a new guideline or procedure will be used. An example of a completed NEMS PD Planning Sheet is attached.

1. Make a NEMS record for each deferred verification by completing NEMS PD Planning Sheets (reference 3) in accordance with Reference 2.
2. Submit sheet to either A. Koslow or G.B. Stramback.

  
G. B. Stramback, Manager  
Component 913

GBS:blt

## DEFERRED VERIFICATIONS

### Resolution Efforts

To compensate for the lack of management interest in deferred verification problems, I tried to use the Productivity Improvement Proposal system to obtain corrective action. I used this approach because responses were required to all inputs to the system. Thus, I could not be ignored. Following is the record of my effort to use the Productivity Improvement Proposal system to

1. provide traceability to and retrievability of the DVSCN, and to
2. insure adequate verification prior to the use of a DVSCN for the removal of a record of deferred verification.

The suggestions were rejected, as shown on the page following the suggestions.

NUCLEAR CONTROL AND INSTRUMENTATION DEPARTMENT

# PRODUCTIVITY IMPROVEMENT PROPOSAL

ALL AREAS MUST BE COMPLETED BY PROPOSER

EMP PAY NO.	COMP NO.	EMPLOYEE NAME	BLDG	ROOM	EXT
16206	913	SAM A MILAM III	ALM	1317	55151

YOUR JOB TITLE	PROPOSAL TITLE
ENGINEER	DEFERRED VERIFICATION

WHO SHOULD EVALUATE YOUR PROPOSAL (CHECK ONE)  
 FAB     MECH     PANEL ELECT     PANEL NON-E     PGCC     FARM OUT     OTHER BUY

DESCRIBE YOUR PROPOSAL

Suggestion: Record and document closure of deferred verification commitments on ECN's by issuing an additional internal sheet to the ECN, using the same ECN number

Background: The current method requires a lengthy search for (non-traceable) Design Verification Status Change Notices (DVSCN) to confirm closure of deferred verification. Since DVSCN's are issued with no number, they are not effectively retrievable. The suggested method would supply closure confirmation automatically when the ECN was ordered from the print room because the additional internal sheet would be attached to the ECN. No search would be necessary.

YOUR SIGNATURE(S)    9-11-81

Sam A. Milam III    Sam A. Milam III    John F. Leahy    John F. Leahy    9-11-81

EVALUATORS' RECOMMENDATIONS    IF REJECTED, NAME OF PERSON WHO MADE ACTUAL DECISION

ACCEPT     REJECT

REASON FOR REJECTION - SHOULD BE A COMPLETE AND DETAILED STATEMENT SUITABLE FOR INCORPORATION IN A LETTER DOCUMENTING THE NON-ADOPTION OF THE PROPOSAL. IF PREVIOUS CONSIDERATION HAS BEEN GIVEN TO THIS IDEA, INCLUDE REFERENCE TO SPECIFIC CORRESPONDENCE, DRAWINGS, SHOP ORDERS, ETC.

See letter, Sam A. Milam III to A. Koslow, Retrievability of Verification Records, March 8, 1982, filed week 824

NUCLEAR CONTROL AND INSTRUMENTATION DEPARTMENT

# PRODUCTIVITY IMPROVEMENT PROPOSAL

ALL AREAS MUST BE COMPLETED BY PROPOSER

EMP PAY NO.	COMP NO.	EMPLOYEE NAME	BLDG	ROOM	EXT
16137940	0	MARILYN HAIGES	ALM	1410	52367
16206913		SAM A MILAM III	ALM	1317	55151

YOUR JOB TITLE	PROPOSAL TITLE
ANALYST ENGINEER	DESIGN VERIF REV I

WHO SHOULD EVALUATE YOUR PROPOSAL (CHECK ONE)

FAB    MECH    PANEL ELECT    PANEL NON-E    PGCC    FARM OUT    OTHER BUY

DESCRIBE YOUR PROPOSAL

(Supplement to suggestion "Design Verification" 9-11-91)

For additional internal sheet (per original suggestion) use modified DVSCN, copy attached. Advantages 1. DVSCN is already intended to change verification status 2. DVSCN can be used for both ERM's and ECN's. 3. Minimal changes to EOP, 4. No new document is issued - DVSCN gets number of previous ERM or ECN and is filed in graphics with the original document - no waste. 5. For verification data, just order DVSCN sheet, not entire ECN. 6. Auditible, traceable record of cleared deferred verification. Note: Requires EOP changes, must be implemented by SED.

YOUR SIGNATURE(S)  
 Sam A. Milam III  
 10-6-81

Marilyn Haiges 10-6-81

EVALUATORS' RECOMMENDATIONS

ACCEPT    REJECT

IF REJECTED, NAME OF PERSON WHO MADE ACTUAL DECISION

REASON FOR REJECTION - SHOULD BE A COMPLETE AND DETAILED STATEMENT SUITABLE FOR INCORPORATION IN A LETTER DOCUMENTING THE NON-ADOPTION OF THE PROPOSAL. IF PREVIOUS CONSIDERATION HAS BEEN GIVEN TO THIS IDEA, INCLUDE REFERENCE TO SPECIFIC CORRESPONDENCE, DRAWINGS, SHOP ORDERS, ETC.

See letter, Sam A. Milam III to A. Koslow,  
 Retrievability of Verification Records,  
 March 8, 1982, filed week 8211

FROM: \_\_\_\_\_  
 COMP NO: \_\_\_\_\_ DATE \_\_\_\_\_

To: PLANT DEFINITION & RELEASE CONTROL UNIT  
 MAIL CODE 724

ADDITIONAL INDEPENDENT VERIFICATION OF DESIGNS DELINEATED BY THE LISTED DOCUMENTS IS REQUIRED AND WILL BE COMPLETED BY FW \_\_\_\_\_  
 SECTION MANAGER APPROVAL \_\_\_\_\_

ALL RECORDS SHOWING VERIFIED STATUS OF THESE ITEMS SHOULD BE CHANGED TO "UNVERIFIED"

INDEPENDENT VERIFICATION OF DESIGNS DELINEATED BY THE LISTED DOCUMENTS HAS BEEN COMPLETED. ALL RECORDS SHOWING "UNVERIFIED" STATUS OF THESE ITEMS SHOULD NOW BE CHANGED ACCORDINGLY.

DOCUMENT IDENT NO.	MPL NO. OR SUB.	DOCUMENT TITLE	VERIFICATION DOCUMENTS (RECORDS, ETC)
<p>PRESENT FORM</p>			

\_\_\_\_\_  
 (RESPONSIBLE DESIGN ENGINEER SIGNATURE)

\_\_\_\_\_  
 DATE

DISTRIBUTION:



Ext \_\_\_\_\_ M/C \_\_\_\_\_  
 Comp \_\_\_\_\_ DATE \_\_\_\_\_  
 ISSUED DATE \_\_\_\_\_ ERM, ECN No. \_\_\_\_\_  
 Sheet No. V \_\_\_\_\_ of \_\_\_\_\_

DOCUMENT IDENT NO.	MPL NO. OR SUB.	DOCUMENT TITLE	VERIFICATION DOCUMENTS (RECORDS, ETC)
Proposed		Form	

VERIFICATION COMMENTS

RESOLUTION

\_\_\_\_\_  
 Responsible Engineer, Date

VERIFICATION STATEMENT

VERIFIED BY \_\_\_\_\_ DATE \_\_\_\_\_

DRF NO \_\_\_\_\_

INDEPENDENT VERIFICATION OF DESIGNS DELINEATED BY THE LISTED DOCUMENTS HAS BEEN COMPLETED. ALL RECORDS SHOWING "UNVERIFIED" STATUS OF THESE ITEMS SHOULD NOW BE CHANGED ACCORDINGLY.

\_\_\_\_\_  
 Responsible Engineer Date

\_\_\_\_\_  
 Responsible Manager, Comp, Date

DISTRIBUTION:

\_\_\_\_\_  
 Lead System Engineer, Comp, Date

\_\_\_\_\_  
 Change Control Endorsement, Date



DESIGN VERIFICATION STATUS CHANGE NOTICE  
continuation sheet

Ext _____ M/C _____ Comp _____ Date _____	ISSUED DATE	ERM, ECN No. _____ Sheet No. V _____ of _____
--	-------------	--

DOCUMENT IDENT NO.	MPL NO. OR SUB.	DOCUMENT TITLE	VERIFICATION DOCUMENTS (RECORDS, ETC)
Proposed Form			

MAR 8 1982

GENERAL ELECTRIC

N.E.30

NUCLEAR CONTROL AND INSTRUMENTATION DEPARTMENT

SA MILAM !!!

# PRODUCTIVITY IMPROVEMENT PROPOSAL

ALL AREAS MUST BE COMPLETED BY PROPOSER

EMP PAY NO.	COMP NO.	EMPLOYEE NAME	BLDG	ROOM	EXT
16137740	MAR	LYN HAIGES	ALM	1410	52367
16206913	SAM	A MILAM	ALM	1317	55151

YOUR JOB TITLE	PROPOSAL TITLE
ANALYST ENGINEER	DESIGN VERIF REV

WHO SHOULD EVALUATE YOUR PROPOSAL (CHECK ONE)  
 FAB  MECH  PANEL ELECT  PANEL NON-E  PGCC  FARM OUT  OTHER BUY

DESCRIBE YOUR PROPOSAL  
 (Supplement to suggestion "Design Verification" 9-11-81)  
 For additional internal sheet (per original suggestion) use modified DVSCN, copy attached. Advantages 1. DVSCN is already intended to change verification status 2. DVSCN can be used for both ERM's and ECN's. 3. Minimal changes to EOP, 4. No new document is issued - DVSCN gets number of previous ERM or ECN and is filed in graphics with the original document - no waste. 5. For verification data, just order DVSCN sheet, not entire ECN. 6. Auditible, traceable record of cleared deferred verification.  
 Note: Requires EOP changes, must be implemented by SED.

YOUR SIGNATURE(S)  
 Sam A. Milam III 10-6-81  
 Marilyn Thiges 10-6-81

EVALUATORS' RECOMMENDATIONS  
 ACCEPT  REJECT  
 IF REJECTED, NAME OF PERSON WHO MADE ACTUAL DECISION  
 Charles W. Lat

REASON FOR REJECTION - SHOULD BE A COMPLETE AND DETAILED STATEMENT SUITABLE FOR INCORPORATION IN A LETTER DOCUMENTING THE NON-ADOPTION OF THE PROPOSAL. IF PREVIOUS CONSIDERATION HAS BEEN GIVEN TO THIS IDEA, INCLUDE REFERENCE TO SPECIFIC CORRESPONDENCE, DRAWINGS, SHOP ORDERS, ETC.  
 Engineering has evaluated this proposal against the actual use of the DVSCN and concludes that the EOP defined use of the DVSCN is adequate for tracking deferred verification and closing them and upon successful verification of a design. The cost of changing the system to release some copies of each DVSCN cannot be justified.

## DEFERRED VERIFICATIONS

### Resolution Efforts

While I was involved in the attempt to resolve DVSCN deficiencies, I also tried to issue a deferred verification using the DVSCN in accordance with the procedures. My document issue package contained the reviewed check print, the ERM and the DVSCN. All anticipated technical review of the check print was complete. The reason for the deferred verification was an unverified source document.

The document issue package was rejected back to me and my immediate manager with instructions to

1. issue the document without a DVSCN, and
2. use a Design Record File (DRF).

(Whether or not to use a DRF is a related issue which I have tried not to address in this report.) The following notes and letters show the situation which then developed.

FROM: Sam A. Milan III  
 COMP NO: 913 DATE 2-24-82

To: PLANT DEFINITION & RELEASE CONTROL UNIT  
 MAIL CODE 724

ADDITIONAL INDEPENDENT VERIFICATION OF DESIGNS DELINEATED BY THE LISTED DOCUMENTS IS REQUIRED AND WILL BE COMPLETED BY FW 8213

SECTION MANAGER APPROVAL X

ALL RECORDS SHOWING VERIFIED STATUS OF THESE ITEMS SHOULD BE CHANGED TO "UNVERIFIED"

INDEPENDENT VERIFICATION OF DESIGNS DELINEATED BY THE LISTED DOCUMENTS HAS BEEN COMPLETED. ALL RECORDS SHOWING "UNVERIFIED" STATUS OF THESE ITEMS SHOULD NOW BE CHANGED ACCORDINGLY.

DOCUMENT IDENT NO.	MPL NO. OR SUB.	DOCUMENT TITLE	VERIFICATION DOCUMENTS (RECORDS, ETC)
866E304BA	B33-1020	Reactor Recirculation System	ERM AML-2997

*Redundant not required (see EOP 42-6.00 & 4.1.2 a.)*

*4-2-25*

Sam A. Milan III  
 (RESPONSIBLE DESIGN ENGINEER SIGNATURE)

2-24-82  
 DATE

DISTRIBUTION: PR, 430A, 432A, 695A, 366A, 432BF

cc: A. Koslow

3-1-82

To: R.L. Reghitto

Subject: Design Verification Status Change Notice (DVSCN)

The attached DVSCN is not redundant, as you stated. It is required by EOP 42-6.00 paragraph 4.1.2b, copy attached. Because of your red markup, I must now do the DVSCN over again. In the future, please make your editorial comments on a separate sheet, or read the procedure more carefully before marking up my work.

Sam A. Milan ~~III~~

See item 1 week 8210

Work record for week 8210  
Sam A. Milam III

1. References

1. letter from Sam A. Milam II to R.L. Reghitto, Design Verification Status Change Notice (DVSCN), 3-1-82, filed week 8210
2. letter from Sam A. Milam III to A. Koslow, ERM AML-2997, Grand Gulf & Perry, 3-1-82, filed week 8210
3. letter from Sam A. Milam III to A. Koslow, no subject shown, March 4, 1982, filed week 8210

(Further references below)

I am involved in a fight over procedures. I insist that a DVSCN is required in addition to the ERM. I insist that a DRF reference is not required on the ERM. My position is confirmed by Leland Bohl, Bob Franciose and Jay Murray. When I asked Frank Casporvic, he said he didn't know. R.L. Reghitto is blocking the issue of the DVSCN and requiring the DRF reference. I have not yet begun to fight.

References (continued)

4. Letter, Sam A. Milam III to A. Koslow, Retrievability of Verification Records, March 8, 1982, filed week 8211.
5. Item 1 week 8211
6. Item 3 week 8212

Work record for week 8211  
Sam A. Milam ~~II~~

1. Reference

1. Item 1 week 8210

I retrieved ERM AML-2997 from the issue cycle, redid it and re submitted it for Barrentine signature. Again, it was changed by the addition of a DRF number. I told A. Koslow that I would not put DRF numbers on such ERM's, If someone else is going to arbitrarily require a DRF number, they will have to add it themselves. I also intend to report the practice to the appropriate people at 10<sup>TH</sup> street.  
3-8-82

The second DVSCN has disappeared. The DVSCN is required by EOP 42-6.00 paragraph 4.1.2b. I again have the ERM and I will not issue it until the DVSCN is allowed by my management. I have discussed this sequence of events (variously) with

1. Bob Franciose
2. Frank Gasporovic
3. Leland Bohl
4. Ernie Spensor
5. Arnie Koslow
6. Jay Murray
7. and others.

3-12-82



Work record for week 8212

Sam A. Milam III

3 Reference item 1, week 8210

3-19-82. I finally got the DVSCN signed. I did it by hiding the ERM in my file cabinet and refusing to release it until the DVSCN was permitted.

I had to accept the DRF number on the ERM, but I wrote a disclaimer on sheet 1.

FROM: Sam A. Milan III

To: PLANT DEFINITION & RELEASE CONTROL UNIT

COMP NO: 913

DATE 2-24-82

MAIL CODE 724



ADDITIONAL INDEPENDENT VERIFICATION OF DESIGNS DELINEATED BY THE LISTED DOCUMENTS IS REQUIRED AND WILL BE COMPLETED BY FW 8213

SECTION MANAGER APPROVAL

*[Handwritten Signature]* 3/11/82

ALL RECORDS SHOWING VERIFIED STATUS OF THESE ITEMS SHOULD BE CHANGED TO "UNVERIFIED"



INDEPENDENT VERIFICATION OF DESIGNS DELINEATED BY THE LISTED DOCUMENTS HAS BEEN COMPLETED. ALL RECORDS SHOWING "UNVERIFIED" STATUS OF THESE ITEMS SHOULD NOW BE CHANGED ACCORDINGLY.

DOCUMENT IDENT NO.	MPL NO. OR SUB.	DOCUMENT TITLE	VERIFICATION DOCUMENTS (RECORDS, ETC)
866E304 BA	B33-1020	Reactor Recirculation System	ERM AML-2997

Sam A. Milan III

(RESPONSIBLE DESIGN ENGINEER SIGNATURE)

2-24-82

DATE

DISTRIBUTION: PR, 430A, 432A, 695A, 366A, 432BF

## DEFERRED VERIFICATIONS

### Resolution Efforts

The following letters and the note from my personal work record represent the end of my efforts while employed at GE to resolve the deferred verification problems.

CONTROL & INSTRUMENTATION DEPARTMENT  
San Jose, California

March 8, 1982

See item 1 week 8210  
item 1 week 8213

TO: A. Koslow

SUBJECT: Retrievability of Verification Records

REFERENCES:

1. Productivity Improvement Proposal, Deferred Verification, Sam A. Milam III and John F. Leahey, 9-11-81.
2. Productivity Improvement Proposal, Design Verif Rev 1, Sam A. Milam III and Marilyn Haiges, 10-6-81.
3. Response to Reference 2, Charles W. Hart, not dated.
4. Design Verification Status Change Notice (DVSCN), ERM AML-2997, Sam A. Milam III, 2-24-82.

My proposal to establish retrievability of deferred verification closure has been disapproved in reference 3. The basis of the decision is that the use of the DVSCN, as defined by the EOP, is adequate.

Concurrently, my efforts to use the DVSCN in accordance with the EOP have been opposed. See reference 4. The basis of the opposition is that the DVSCN is redundant and not necessary.

These two positions, existing simultaneously within C&I management are in conflict. I have attached

-continued-

A. Koslow  
March 8, 1982  
Page -2-

copies of the referenced documents for your information. Please resolve this conflict so that we can establish traceability for our deferred verifications and retrievability for their closure.

*Sam A. Milam III*

Sam A. Milam III  
C&I Technical Licensing

SAM/pjw

ATTACHMENT

Work record for week 8213  
Sam A. Milam III

1. Reference

Letter from Sam A. Milam III to A. Koslow,  
Retrievability of Verification Records,  
March 8, 1982

I talked to Ernie Spencer about the rejection of my Productivity Improvement Proposal on deferred verifications. He suggested that if I wish to continue my pursuit of the issue, I should contact Frank Gasporovic. He concurred with my suggestion that I produce an EOP markup for Frank. He seemed optimistic that I could achieve the change I'm after and stated that Bob Parker feels the same way I do.

Arnie Koslow said we don't presently have the resources for the EOP markup. He instructed me to give the work very low priority.

3-23-82

STRICTLY PRIVATE

NUCLEAR CONTROL AND INSTRUMENTATION DEPARTMENT  
San Jose, California

April 1, 1982

Dear Mr. Milam,

I regret to inform you that as of April 30, 1982, there no longer will be work available for you within the Safety and Licensing Unit. Unless before that date you secure a position elsewhere in the Operations or Company, you will be placed on a lack-of work status. This situation exists as a result of current business conditions.

Professional Resources will assist you in ascertaining whether there are other available positions elsewhere in the Operations or other General Electric components which can utilize your experience and abilities. I suggest that as a first step you contact the Manager-Professional Resources, Extension 53610, who will continue to seek possible placement opportunities through contacts available to me. I also encourage you to pursue whatever leads you may be able to develop including, if you wish, contacts outside the Company.

I hope our combined efforts will assist you in locating a rewarding position which will utilize fully your capabilities.

Sincerely,



D.W. Reigel, Manager  
Systems Engineering

STRICTLY PRIVATE

## DEFERRED VERIFICATIONS

### Conclusions

I am forced to conclude that C&ID management has no interest in resolving the deficiencies in the control of deferred verifications. Indeed, I speculate that the existence of the various problems has made possible the justification of the resources committed to their solution, and that the continued lack of any solutions will justify the continued commitment of these resources.



## DEFERRED VERIFICATIONS

### Recommendations

The solution of the deferred verification problem falls neatly into two parts:

1. completion of verifications which have been previously deferred, and
2. resolution of deficiencies in the control of deferred verifications.

The completion of verifications that have previously been deferred may not be possible. Merely recovering the record of forgotten deferred verifications will be a tedious task, if not a monumental one. The completion of the deferred verifications once they are brought to light will require information which, in many cases, will no longer be available. Nevertheless, I recommend that the effort be made.

There are two approaches to the resolution of deficiencies in the control of deferred verifications. One approach is to make the sorts of changes that I have discussed in this report. Experience, however, forces me to doubt the value of this approach. I feel that the only reliable approach is to simply not allow verifications to be deferred. This would prevent the deficiencies, avoiding the need to resolve them, and is my final recommendation on the subject.

## DEFERRED VERIFICATIONS

### References

1. 10 CFR 50, Appendix B
2. EOP 42-6.00, Independent Design Verification, General Electric Company
3. Engineering Documentation Practices Manual, number unknown, General Electric Company
4. NEDE - 24563, Engineering Information System User's Guide, General Electric Company
5. EOP 30-4.00, Engineering Information System, General Electric Company
6. Personal Work Record, Sam A. Milam III, Nuclear Engineer

DEFERRED VERIFICATIONS

Appendix

Fiscal Calanders

# 1980

## FISCAL CALENDAR

# 1980

MO	M	T	W	T	F	S	S	WK	MO	M	T	W	T	F	S	S	WK
<b>FIRST QUARTER</b>									<b>THIRD QUARTER</b>								
<b>JAN</b>		1	2	3	4	5	6	1	<b>JUL</b>	30	1	2	3	4	5	6	27
<b>5</b>	7	8	9	10	11	12	13	2	<b>5</b>	7	8	9	10	11	12	13	28
<b>WKS</b>	14	15	16	17	18	19	20	3	<b>WKS</b>	14	15	16	17	18	19	20	29
	21	22	23	24	25	26	27	4		21	22	23	24	25	26	27	30
	28	29	30	31	1	2	3	5		28	29	30	31	1	2	3	31
<b>FEB</b>	4	5	6	7	8	9	10	6	<b>AUG</b>	4	5	6	7	8	9	10	32
<b>4</b>	11	12	13	14	15	16	17	7	<b>4</b>	11	12	13	14	15	16	17	33
<b>WKS</b>	18	19	20	21	22	23	24	8	<b>WKS</b>	18	19	20	21	22	23	24	34
	25	26	27	28	29	1	2	9		25	26	27	28	29	30	31	35
<b>MAR</b>	3	4	5	6	7	8	9	10	<b>SEP</b>	1	2	3	4	5	6	7	36
<b>4</b>	10	11	12	13	14	15	16	11	<b>4</b>	8	9	10	11	12	13	14	37
<b>WKS</b>	17	18	19	20	21	22	23	12	<b>WKS</b>	15	16	17	18	19	20	21	38
	24	25	26	27	28	29	30	13		22	23	24	25	26	27	28	39
<b>SECOND QUARTER</b>									<b>FOURTH QUARTER</b>								
<b>APR</b>	31	1	2	3	4	5	6	14	<b>OCT</b>	29	30	1	2	3	4	5	40
<b>5</b>	7	8	9	10	11	12	13	15	<b>5</b>	6	7	8	9	10	11	12	41
<b>WKS</b>	14	15	16	17	18	19	20	16	<b>WKS</b>	13	14	15	16	17	18	19	42
	21	22	23	24	25	26	27	17		20	21	22	23	24	25	26	43
	28	29	30	1	2	3	4	18		27	28	29	30	31	1	2	44
<b>MAY</b>	5	6	7	8	9	10	11	19	<b>NOV</b>	3	4	5	6	7	8	9	45
<b>4</b>	12	13	14	15	16	17	18	20	<b>4</b>	10	11	12	13	14	15	16	46
<b>WKS</b>	19	20	21	22	23	24	25	21	<b>WKS</b>	17	18	19	20	21	22	23	47
	26	27	28	29	30	31	1	22		24	25	26	27	28	29	30	48
<b>JUN</b>	2	3	4	5	6	7	8	23	<b>DEC</b>	1	2	3	4	5	6	7	49
<b>4</b>	9	10	11	12	13	14	15	24	<b>4</b>	8	9	10	11	12	13	14	50
<b>WKS</b>	16	17	18	19	20	21	22	25	<b>WKS</b>	15	16	17	18	19	20	21	51
	23	24	25	26	27	28	29	26		22	23	24	25	26	27	28	52
										29	30	31					
MO	M	T	W	T	F	S	S	WK	MO	M	T	W	T	F	S	S	WK

# 1981

## FISCAL CALENDAR

# 1981

MO	M	T	W	T	F	S	S	WK	MO	M	T	W	T	F	S	S	WK
<b>FIRST QUARTER</b>									<b>THIRD QUARTER</b>								
<b>JAN</b> 5 WKS				1	2	3	4	1	<b>JUL</b> 5 WKS	29	30	1	2	3	4	5	27
	5	6	7	8	9	10	11	2		6	7	8	9	10	11	12	28
	12	13	14	15	16	17	18	3		13	14	15	16	17	18	19	29
	19	20	21	22	23	24	25	4		20	21	22	23	24	25	26	30
	26	27	28	29	30	31	1	5		27	28	29	30	31	1	2	31
<b>FEB</b> 4 WKS	2	3	4	5	6	7	8	6	<b>AUG</b> 4 WKS	3	4	5	6	7	8	9	32
	9	10	11	12	13	14	15	7		10	11	12	13	14	15	16	33
	16	17	18	19	20	21	22	8		17	18	19	20	21	22	23	34
	23	24	25	26	27	28	1	9		24	25	26	27	28	29	30	35
<b>MAR</b> 4 WKS	2	3	4	5	6	7	8	10	<b>SEP</b> 4 WKS	31	1	2	3	4	5	6	36
	9	10	11	12	13	14	15	11		7	8	9	10	11	12	13	37
	16	17	18	19	20	21	22	12		14	15	16	17	18	19	20	38
	23	24	25	26	27	28	29	13		21	22	23	24	25	26	27	39
<b>SECOND QUARTER</b>									<b>FOURTH QUARTER</b>								
<b>APR</b> 5 WKS	30	31	1	2	3	4	5	14	<b>OCT</b> 5 WKS	28	29	30	1	2	3	4	40
	6	7	8	9	10	11	12	15		5	6	7	8	9	10	11	41
	13	14	15	16	17	18	19	16		12	13	14	15	16	17	18	42
	20	21	22	23	24	25	26	17		19	20	21	22	23	24	25	43
	27	28	29	30	1	2	3	18		26	27	28	29	30	31	1	44
<b>MAY</b> 4 WKS	4	5	6	7	8	9	10	19	<b>NOV</b> 4 WKS	2	3	4	5	6	7	8	45
	11	12	13	14	15	16	17	20		9	10	11	12	13	14	15	46
	18	19	20	21	22	23	24	21		16	17	18	19	20	21	22	47
	25	26	27	28	29	30	31	22		23	24	25	26	27	28	29	48
<b>JUN</b> 4 WKS	1	2	3	4	5	6	7	23	<b>DEC</b> 4 WKS	30	1	2	3	4	5	6	49
	8	9	10	11	12	13	14	24		7	8	9	10	11	12	13	50
	15	16	17	18	19	20	21	25		14	15	16	17	18	19	20	51
	22	23	24	25	26	27	28	26		21	22	23	24	25	26	27	52
											28	29	30	31			
MO	M	T	W	T	F	S	S	WK	MO	M	T	W	T	F	S	S	WK

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GENERAL  ELECTRIC

# 1982

## FISCAL CALENDAR

# 1982

MO	M	T	W	T	F	S	S	WK	MO	M	T	W	T	F	S	S	WK		
<b>FIRST QUARTER</b>									<b>THIRD QUARTER</b>										
<b>JAN</b> <b>5</b> WKS					1	2	3	1	<b>JUL</b> <b>5</b> WKS	28	29	30	1	2	3	4	27		
	4	5	6	7	8	9	10	2		5	6	7	8	9	10	11	28		
	11	12	13	14	15	16	17	3		12	13	14	15	16	17	18	29		
	18	19	20	21	22	23	24	4		19	20	21	22	23	24	25	30		
	25	26	27	28	29	30	31	5		26	27	28	29	30	31	1	31		
<b>FEB</b> <b>4</b> WKS		1	2	3	4	5	6	7	6	<b>AUG</b> <b>4</b> WKS		2	3	4	5	6	7	8	32
	8	9	10	11	12	13	14	7	9		10	11	12	13	14	15	33		
	15	16	17	18	19	20	21	8	16		17	18	19	20	21	22	34		
	22	23	24	25	26	27	28	9	23		24	25	26	27	28	29	35		
<b>MAR</b> <b>4</b> WKS		1	2	3	4	5	6	7	10	<b>SEP</b> <b>4</b> WKS	30	31	1	2	3	4	5	36	
	8	9	10	11	12	13	14	11	6		7	8	9	10	11	12	37		
	15	16	17	18	19	20	21	12	13		14	15	16	17	18	19	38		
	22	23	24	25	26	27	28	13	20		21	22	23	24	25	26	39		
<b>SECOND QUARTER</b>									<b>FOURTH QUARTER</b>										
<b>APR</b> <b>5</b> WKS	29	30	31	1	2	3	4	14	<b>OCT</b> <b>5</b> WKS	27	28	29	30	1	2	3	40		
	5	6	7	8	9	10	11	15		4	5	6	7	8	9	10	41		
	12	13	14	15	16	17	18	16		11	12	13	14	15	16	17	42		
	19	20	21	22	23	24	25	17		18	19	20	21	22	23	24	43		
	26	27	28	29	30	1	2	18		25	26	27	28	29	30	31	44		
<b>MAY</b> <b>4</b> WKS		3	4	5	6	7	8	9	19	<b>NOV</b> <b>4</b> WKS		1	2	3	4	5	6	7	45
	10	11	12	13	14	15	16	20	8		9	10	11	12	13	14	46		
	17	18	19	20	21	22	23	21	15		16	17	18	19	20	21	47		
	24	25	26	27	28	29	30	22	22		23	24	25	26	27	28	48		
<b>JUN</b> <b>4</b> WKS	31	1	2	3	4	5	6	23	<b>DEC</b> <b>5</b> WKS	29	30	1	2	3	4	5	49		
	7	8	9	10	11	12	13	24		6	7	8	9	10	11	12	50		
	14	15	16	17	18	19	20	25		13	14	15	16	17	18	19	51		
	21	22	23	24	25	26	27	26		20	21	22	23	24	25	26	52		
											27	28	29	30	31			53	
MO	M	T	W	T	F	S	S	WK	MO	M	T	W	T	F	S	S	WK		

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