



Department of Energy

Washington, DC 20585

QA: QA

JAN 10 2003

MEMORANDUM FOR: Mark R. Arenaz, DOE/ID

FROM: R. Dennis Brown, Director *James Blaylock*
Office of Quality Assurance

SUBJECT: Evaluation of Complete Response to, Verification of Corrective
Actions and Closure of Deficiency Report (DR) EM(O)-03-D-007

The Office of Quality Assurance staff has evaluated the complete response to, verified the corrective actions of DR EM(O)-03-D-007 and determined the results to be satisfactory. As a result, the DR is considered closed.

If you have any questions, please contact either James Blaylock at (702) 794-1420 or John R. Doyle at (702) 794-5021.

OQA:JB-0504

Enclosure:
DR EM(O)-03-D-007

cc w/encl:

Robert Blyth, NSNFP, Idaho Falls, ID
N. K. Stablein, NRC, Rockville, MD
Robert Latta, NRC, Las Vegas, NV (2 cys)
S. W. Lynch, State of Nevada, Carson City, NV
L. W. Bradshaw, Nye County, Pahrump, NV
J. R. Doyle, NQS, Las Vegas, NV
W. J. Glasser, NQS, Las Vegas, NV
D. G. Opielowski, NQS, Las Vegas, NV
W. J. Arthur, III, DOE/ORD (RW-2W), Las Vegas, NV
B. M. Terrell, DOE/ORD (RW-40W), Las Vegas, NV



Printed with soy ink on recycled paper

NM5507
WM11

**OFFICE OF CIVILIAN
RADIOACTIVE WASTE MANAGEMENT
U.S. DEPARTMENT OF ENERGY
WASHINGTON, D.C.**

8 DEFICIENCY REPORT
 CORRECTIVE ACTION REPORT

NO EM(O)-03-D-007

PAGE 1 OF

QA QA

DEFICIENCY REPORT/CORRECTIVE ACTION REPORT

1 Controlling Document (Document ID and Revision or Date)

Quality Assurance Staff Procedure (QAS) 16 02, Revision 6, *Corrective Action*

2 Related Report No :

EM-ARC-02-10

3 Responsible Organization

National Spent Nuclear Fuel Program

4 Discussed With

Robert Blyth

5 Requirement

QAS 16 02, paragraph III, E 2, states in part: "For significant conditions adverse to quality, perform the following additional steps: "Submit the root cause analysis documentation with the CAR response"

6 Description of Condition

Contrary to the above requirement, no root cause analysis was performed and as a result documentation was not submitted with the response to Corrective Action Report 02-NSNF-AU-001-CAR-001.

Has work been stopped? Yes No

7 Initiator

John R Doyle  10/08/02
Printed Name Signature Date

9 Does a stop work condition exist?

Yes No N/A
If Yes, Check One A B C D

10 Recommended Actions

None

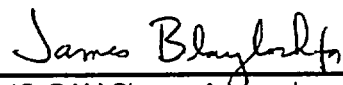
11 QA Review

John R Doyle  10/02/02
Printed Name Signature Date

12 Response Due Date

10 - Working Days after Issuance

13 QAM Issuance Approval

Printed Name R. Dennis Brown Signature  Date 10/17/02

14 Corrective Actions Verified/Closure

John R Doyle  12/31/02
QAR Printed Name Signature Date

15 QAM Closure Approval

Dennis Brown  1/9/03
Printed Name Signature Date

Submittal Page 1 of 1

2. Check if Amended

3. Extended Processing
 No Yes (if yes, submit
Extended Processing request)

**OFFICE OF CIVILIAN
RADIOACTIVE WASTE MANAGEMENT
U.S. DEPARTMENT OF ENERGY
WASHINGTON, D.C.**

1. DR/CAR NO.
EM-ARC-02-10/EM(O)-03-D-007
PAGE OF
QA: QA

DEFICIENCY REPORT/CORRECTIVE ACTION REPORT INITIAL RESPONSE

4. Immediate Actions Necessary to Bring the Process Under Control: (if none, provide justification statement)

The deficient condition applies only to Corrective Action Report 02-NSNF-AU-001-CAR-001. The extent of the deficient condition does not impact the NSNF Program.

Date when process will meet requirements: December 23, 2002

5. Immediate Remedial Actions Completed:

No remedial actions were needed. The absence of a root cause analysis for Corrective Action Report 02-NSNF-AU-001-CAR-001 was already self identified by the NSNF QA staff during their review of the initial proposed corrective action. At the time of the OQA audit (EM-ARC-02-10), NSNF management was taking action to obtain appropriate resources that were independent and qualified to perform the root cause analysis. The resources are now available and are preparing to perform the analysis.

6. Plan for Determining the Extent of Condition:

The absence of the root cause analysis was self identified by NSNFP staff. The present procedures and work practices were adequate and do not need to be revised. Completion of the root cause analysis for Corrective Action Report 02-NSNF-AU-001-CAR-001 and placement in the quality records will prevent recurrence of the problem.

7. Due Date for Submittal of Completed Response:

12/23/02

8. Response by: (Responsible Manager)

Robert Blyth, NSNF QA Program Manager

Robert Blyth 11/22/02
Printed Name Signature Date

9. QAR Evaluation: Accept Partially Accept Reject

JOHN R DOYLE John R Doyle 12/02/02
Printed Name Signature Date

10. QAM Concurrence:

R DENNIS BROWN James B. Blaylock Jr 12/10/02
Printed Name Signature Date

Submittal Page 1 of 1

2. Check if Amended

3. Extended Processing
 No Yes (If yes, submit
Extended Processing request)

OFFICE OF CIVILIAN
RADIOACTIVE WASTE MANAGEMENT
U.S. DEPARTMENT OF ENERGY
WASHINGTON, D.C.

1 DR/CAR NO
EM-ARC-02-10/EM(0)-03-D-007
PAGE 1 OF 1
QA-QA

DEFICIENCY REPORT/CORRECTIVE ACTION REPORT COMPLETE RESPONSE

4. Extent of Condition: (Amended response will be required if all Extent of Condition investigations are not complete and documented herein)

The deficient condition applies only to Corrective Action Report 02-NSNF-AU-001-CAR-001. The current NSNFP procedures and work practices are adequate and do not need to be revised.

5. Impact: (Provide an impact statement relative to waste isolation and safety, and impact to other work, if any)

The condition is limited to the occurrence cited by the Deficiency Report and does not impact implementation of the NSNFP QA Program or extend to repository waste isolation and safety

6. Remedial Actions: (Document all actions necessary to address the results of the Extent of Condition)

The NSNFP completed a root cause determination to support the record for NSNFP report 02-NSNF-AU-001-CAR-001.

7. Root Cause (For a significant CAQ, attach results of formal root cause determination prepared in accordance with AP-16.4Q)
 Apparent Cause

Apparent Cause: Process Incomplete

8. Action to Preclude Recurrence: (Address those actions necessary to prevent the identified cause from recurring)

Complete the process described by current NSNFP Implementing Procedure QAS 16.02 Revision 6 to address the root cause of 02-NSNF-AU-001-CAR-001.

9. Due Date for Completion of Corrective Action:

12/20/02

11. Responsible Manager

R. Blyth

Printed Name

Signature

Date

11. QAR Evaluation: Accept Partially Accept Reject

*Re-evaluated Per Significance
No Further*

JOHN R. DOYLE

John R. Doyle

12/20/02

Printed Name

Signature

Date

12. QAM Concurrence:

ENNIS BREWSTER

Ennis Brewster

1/9/03

Printed Name

Signature

Date

OFFICE OF
CIVILIAN RADIOACTIVE WASTE MANAGEMENT
U.S. DEPARTMENT OF ENERGY
WASHINGTON, D.C.

DR/CAR/QO
 SWO

No. EM(O)-03-D-007

Page of

QA: QA

CONDITION ADVERSE TO QUALITY CONTINUATION PAGE

Verification of Committed Corrective Actions to Deficiency Report EM(O)-03-D-007

Block 4. Extent of Condition:

See Complete Response:

Block 5. Impact:

See Complete Response:

Block 6 Remedial Action:

- 1. Verified National Spent Fuel Program Quality Assurance Program Root Cause Analysis of 02-NSNF-AU-001-CAR-001, Rev.1 was performed. (See Attachment 1)

Block 7 Root Cause:

See Complete Response.

Block 17 Action to Preclude Recurrence:

See Block 6

The Above Committed Corrective Actions have been satisfactorily verified.

This Deficiency Report is considered closed.

QAR: John R. Doyle

Date: 12/31/02

John R. Doyle

ATTACHMENT 1 TO
DR EM(0)-03-D-007

p 1 of 10

Causal Analysis for the
**NATIONAL SPENT NUCLEAR FUEL PROJECT
SUPPLIER EVALUATION EVENT**

CAR No. 02-NSNF-AU-001-CAR-001

Date of Event: May 30, 2002

Report Date: December 24, 2002

/s/

Cause Analyst - R. O. Laing

12/24/2002

Date

/s/

D. A. Armour
QA Manager National Spent Nuclear Fuel

12/24/2002

Date

Table of Contents

Executive Summary..... 1
Description of Occurrence:..... 2
Investigation: 2
Facts and Analysis:..... 2
Cause Analysis: 4
Individuals Interviewed 5
Documents Reviewed..... 5
Causal Analysis Diagrams..... 6

Executive Summary :

On 5/14/2002 it was reported (CAR: 02-NSNF-AU-001-CAR-001) that a supplier evaluation was not performed by the National Spent Nuclear Fuel Program (NSNFP) prior to the start of work, as required by the Quality Assurance Requirements and Description (QARD) and Program Management Procedure (PMP) PMP 4.01. The INEEL M&O contractor, specifically the INTEC Materials and Analysis Group, supported by the several other M&O Contractor programs, was performing the work. The work had been ongoing for about a year and a half at the time the CAR was written and has since been completed. The work, described in a Task Management Agreement, was for evaluating Fuel Canister Stress Corrosion Cracking Susceptibility and a Test Plan for Evaluating Fuel Canister Stress Corrosion Cracking Susceptibility. The CAR also cites there was no objective evidence that the NSNFP QAPM had accepted the supplier QA Program nor had surveillances been performed on this work as required by the QARD.

The root cause of this event was that NSNFP management did not adequately enforce compliance to existing procedures.

The contributing cause of this event was that NSNFP management did not adequately define the policy regarding interaction and work with the M&O program.

The direct cause of this event was management contracted work with an unqualified supplier.

Description of Occurrence:

On 5/14/2002 it was reported (CAR: 02-NSNF-AU-001-CAR-001) that a supplier evaluation was not performed by the NSNFP prior to the start of work, as required by the QARD and PMP 4.01 (The CAR cites PSO 7.02 as the procedure violated but the event took place under PMP 4.01). The INEEL M&O contractor, specifically the INTEC Materials and Analysis Group, supported by the several other M&O Contractor programs, was performing the work. The work had been ongoing for about a year and a half at the time the CAR was written and has since been completed. The work is described in DOE/SNF/TMA-001, Rev. 0, Task Management Agreement for evaluating Fuel Canister Stress Corrosion Cracking Susceptibility and DOE/SNF/PP-029, Rev 1, Test Plan for Evaluating Fuel Canister Stress Corrosion Cracking Susceptibility. The CAR also cites there was no objective evidence that the NSNFP QAPM had accepted the supplier QA Program as required by DOE/SNF/TMA-001, Rev. 0. There was also no objective evidence that any surveillances had been performed on this work as required by QARD section 2.2.6.

This report documents the causal analysis performed on the failure of NSNFP to perform a supplier evaluation, the methods used, and results.

Investigation:

The NSNFP QAS Manager on 11/26/02 chartered this investigation. The related documents were collected and reviewed and personnel knowledgeable of the event were interviewed to determine facts surrounding this issue. A list of personnel interviewed and documents reviewed is at the end of this report.

The assembled data were collected and analyzed using the Kepner-Tregoe Problem Analysis model, Events and Causal Factor Analysis and Barrier Analysis. The Events and Causal Factor Analysis and Barrier Analysis are included in the report.

Facts and Analysis:

The NSNFP and DOE-ID wanted to obtain and retain SNF work at the INEEL but the M&O program did not have an OCRWM approved QAP. During previous work practices the NSNFP had used the M&O workers in a staff augmentation process under the NSNFP QAP. This allowed work to proceed without a qualified M&O QA program.

In this case the NSNFP and DOE-ID management made decisions to pursue work on two different occasions approving partial M&O QA program elements to allow the work to proceed. This was done instead of waiting until the M&O Contractor SNF QA program was approved in total.

This work augmentation process had also developed an integrated working relationship with the NSNFP and M&O that created problems when efforts were undertaken to develop and approve work with the M&O.

Oversight by NSNFP was hampered. Both NSNFP and M&O employees wear an M&O Contractor badge that look the same indicating that they are both employed by the same employer. Additionally, the NSNFP used a staff augmentation process where M&O employees had worked with NSNFP employees. Later NSNFP employees were required to perform oversight on the M&O QA. This oversight opinion was often at variance with what the NSNFP employee had previously understood or performed. This created confusion in NSNFP employee's working relations and less-than-adequate oversight of the M&O.

The reduction in force at the INEEL M&O during this time amplified the need and desire of NSNFP to obtain and retain work at the INEEL. The NSNFP management, aware of this ever-present issue, made decisions to pursue work on two different occasions with partial M&O QA program element approval instead of waiting until the M&O QA program was approved in total.

The DOE-ID management, also aware of these reduction in force issues, felt "political pressure" to keep work at the INEEL. This motivated DOE-ID to approve the two NSNFP decisions to pursue work with partial M&O QA program element approval.

Workers faced with the possibility of lay-off tended to protect their own status and to not work as openly with others in that environment. This may have contributed to inadequate attention to the organizational needs, specifically the work to qualify the M&O as a supplier.

Requirements for QA program qualification had frequently changed. The quality requirements for meeting the NSNFP supplier qualifications were evolving. It became an effort to hit a moving target by the NSNFP to qualify the M&O as a supplier.

When the NSNFP and DOE-ID approved two work activities covered by elements of the M&O QA program, the perception by the M&O supplier was that their QA program was adequate.

There were two contract documents proposed to authorize work with the M&O. One contract identified the work as being quality and the other as being non-quality. There was confusion about whether the work was to be quality or non-quality and which contract was issued. The contract issued was for work on a quality basis.

Cause Analysis:

The root cause of this event was that NSNFP management did not adequately enforce compliance to existing procedures. The human performance error precursors that contributed to this cause were a) changes in and departure from routine e.g. the work augmentation practice, and b) workarounds had become acceptable practice in approving targeted work within QA elements, **Management Problem 6E Policy Not Adequately Enforced**

The contributing causes of this event were that:

1. NSNFP management did not adequately define policy within its own organization regarding interaction and work with the M&O supplier program. The human performance error precursors that contributed to this cause were a) accepted workaround use of the M&O QAP elements, and b) unclear roles, responsibilities, authorities and accountabilities (R2A2) within the NSNFP QA organization. **Management Problem 6E Policy Not Adequately Defined**
2. NSNFP contract was not clearly defined or communicated to all affected parties resulting in confusion about the quality status of the work. The human performance error precursor that contributed to this cause was confusing controls. **Management Problem 6E Policy Not Adequately Define**

The direct cause of this event was NSNFP management issued a contract for work with an unqualified supplier. **Management Problem 6B Work Planning Deficiency**

Individuals Interviewed







- Don Armour NSNFP QAS Manager
- Phil Wheatley NSNFP Manager
- Mark Watts INEEL Procurement QA Manager,
- Scott Gladson NSNF
- Neal MacKay NSNFP QE
- Nick Wade INEEL SNF
- Dave Kimbro INEEL SNF
- Bob Hendrickson INEEL QE
- Robert D. Davis DOE-ID
- Robert Blyth DOE-ID
- Tom Lewellen Former NSNFP QAS Manager

Documents Reviewed

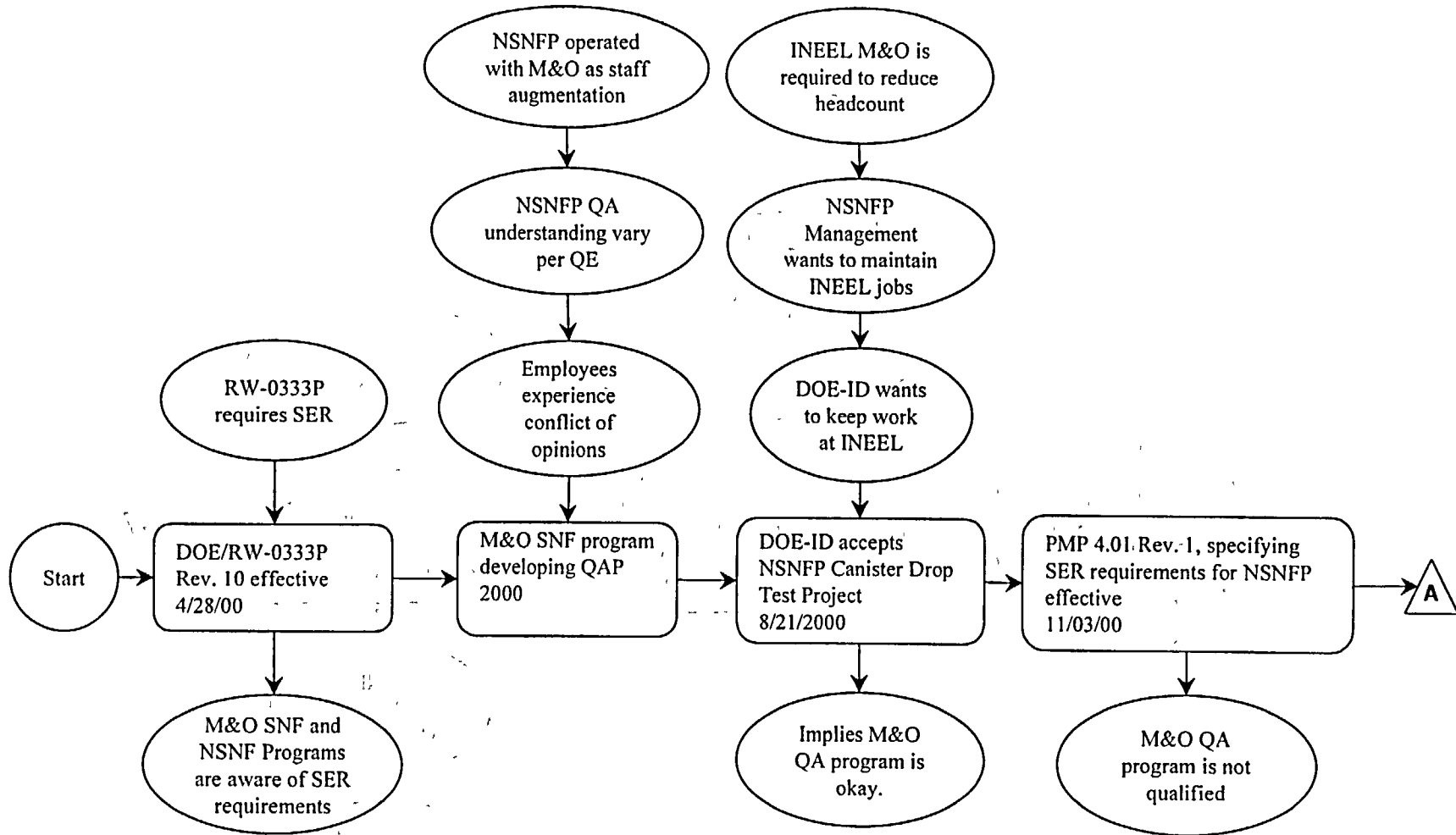
- DOE Memo, 10/22/00 from Robert D. Davis to Mark R. Arenaz
- NSNF PMP 4.01, Acquisition of Products and Services, Effective 11/03/00
- OCRWM DOE/RW-0333P Rev. 10, Quality Assurance Requirements and Description, Effective 4/28/00
- DOE Memo, 6/29/01 from Robert L. Blyth to Mark R. Arenaz
- NSNFP PSO 7.02, Evaluation of Services from Government Sector Suppliers, Effective 1/15/02
- DOE Memo, 6/26/02 from Randolph T. Kay to Mark R. Arenaz
- DOE Memo, 9/5/02 from Robert L. Blyth to Mark R. Arenaz
- CAR No. 02-NSNF-AU-001-CAR-001, Effective 1/15/02
- DOE Memo, 10/21/02 from Robert L. Blyth to Mark R. Arenaz
- DOE Memo, 11/05/02 from Robert L. Blyth to Mark R. Arenaz
- DOE Audit Report: 02-NSNFP-AU-001, Internal Audit of the National Spent Nuclear Fuel Program and Quality Assurance Organization, Issued June 2002

Causal Analysis Diagrams

NSNFP Supplier Evaluation Event Barrier Analysis

Barrier	Performance
NSNFP policy and work with the M&O supplier 	Unclear
PMP 4.01 	Not followed by NSNFP
NSNFP Management Oversight 	Allowed selected work to proceed
DOE Oversight 	Allowed selected work to proceed
PSO 7:02 	Not followed by NSNFP
Supplier Evaluation Report 	Not used by NSNFP
NSNFP contracts work from unqualified supplier	

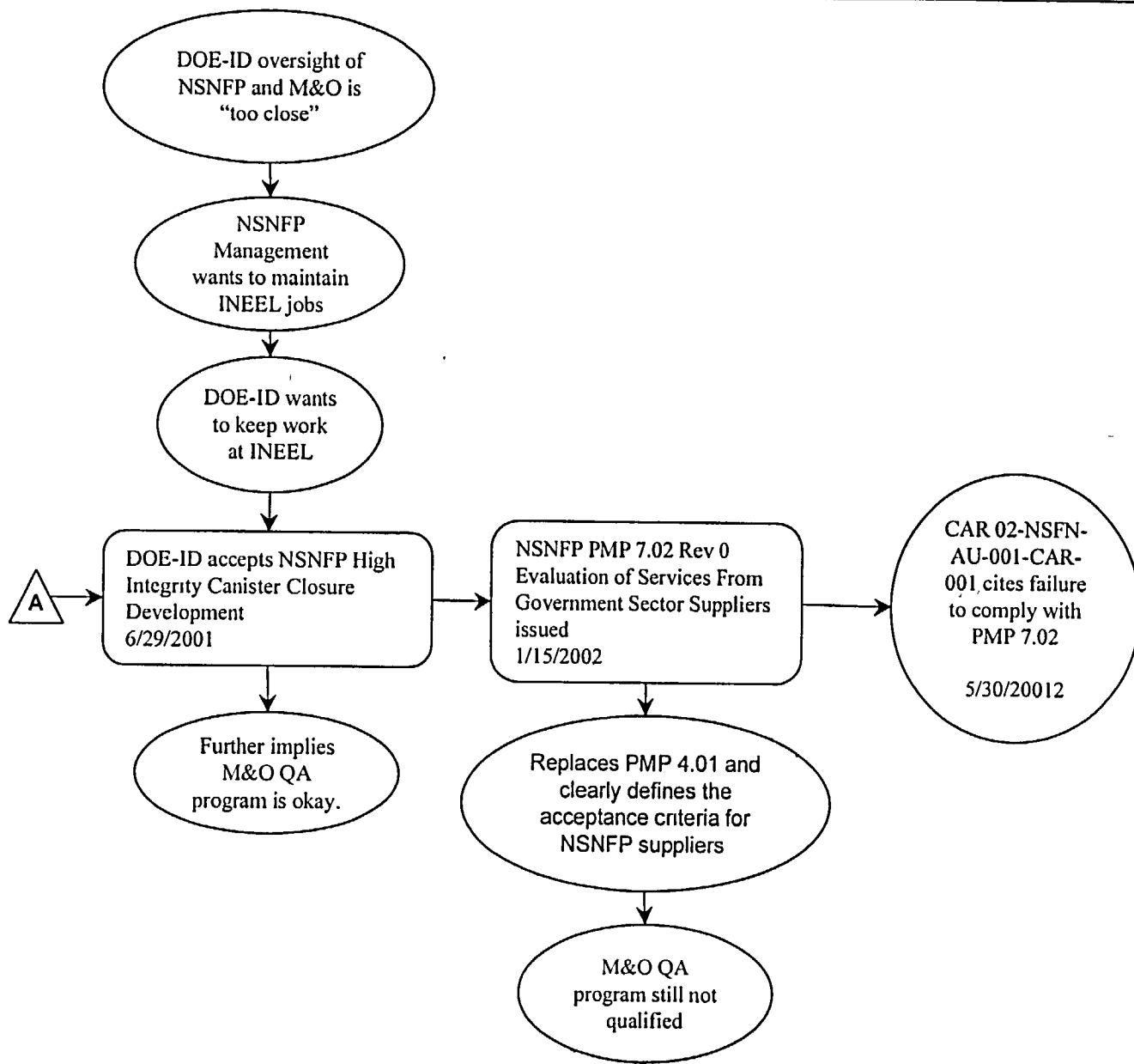
NSNFP SUPPLIER EVALUATION EVENT: Events and Causal Factors



Attachment 2 FD
 DR EM (O) - 03-D - 007

P 4 0 F 10

NSNF SUPPLIER EVALUATION EVENT : Events and Causal Factors - Continued



ATTACHMENT 1
DR EM(6)-03-D-007

plb of 10

14 of 14