U. S. NUCLEAR REGULATORY COMMISSION
REGION I

Report Nos. 50-352/92-13 & 50-353/92-13

Docket Nos 50-352 & 50-353

License Nos. NPF-39 & NPF-85

Licensee: Philadelphia Electric Company
Correspondence Control Desk
P. O. Box 195
Wayne, PA 19087-0195

Facility Name: Limerick Generating Station, Units 1 & 2

Meeting At: NRC Region I, King of Prussia, Pennsylvania

Meeting Conducted: April 10, 1992

Prepared by: S. Sherbini
S. Sherbini, Senior Radiation Specialist
Facilities Radiation Protection Section
4/20/92
date

Approved by: RL Nimitz for
W. Pasciak, Chief, Facilities Radiation Protection Section
4/20/92
date

Meeting Summary: Enforcement Conference at NRC Region I, King of Prussia, Pennsylvania, on April 10, 1992, to discuss the findings of NRC Combined Inspection Report Nos. 50-352/92-13 & 50-353/92-13. Presentations by licensee representatives described the details of the intake of radioactive material by a radiation worker on March 25, 1992, the root cause analysis, and the short- and long-term corrective actions. Details of the intake of radioactive material were not discussed pending the availability of the results of bioassay analysis.

The meeting was attended by NRC and licensee management and staff and lasted approximately three hours.

DETAILS

1.0 Participants

1.1 Philadelphia Electric Company

D. M. Smith, Senior Vice president - Nuclear
G. M. Leitch, Vice President - Limerick
D. R. Helwig, Vice President - Nuclear Engineering & Services
J. Doering, Plant Manager - Limerick
G. J. Beck, Manager, Licensing
R. Bryan, Nuclear Maintenance Job Leader
R. Dubiel, Superintendent of Services - Limerick
D. J. Horne, Engineer, Nuclear Maintenance
W. G. Macfarland, Manager, Nuclear Maintenance
W. A. Texter, Superintendent Reactor services

1.2 NRC Personnel

R. Cooper, Director, Division of Radiation Safety and Safeguards
J. P. Durr, Acting Deputy Director, Division of Radiation Safety and Safeguards
S. F. Shankman, Acting Deputy Director, Division of Reactor Projects
A. R. Blough, Chief, Reactor Projects Branch 2
D. J. Holody, Enforcement Officer, Region I
J. H. Joyner, Chief, Facilities Radiological Safety and Safeguards Branch
T. Kenny, Senior Resident Inspector - Limerick
C. L. Miller, Office of Nuclear Reactor Regulation
W. Pasciak, Chief, Facilities Radiation Protection Section
S. Sherbini, Senior Radiation Specialist

2.0 Purpose

The Enforcement Conference was held at the request of NRC Region I to discuss the circumstances connected with an incident involving an intake of radioactive material by a radiation worker. The incident occurred on March 25, 1992 during work in the reactor cavity of the Unit 1 reactor.

3.0 Licensee Presentation

The NRC began the conference by expressing concern that the incident may be an indication of a significant weakness in the radiological controls program on site. The NRC also expressed concern that the magnitude of the intake of radioactive

material, although below regulatory limits, was significantly higher than is normally encountered in current power plant radiological practice.

The licensee stated that the details of the incident provided in NRC Inspection Report Nos. 50-352/92-13 & 50-353/92-13 were substantially correct. The licensee then provided the meeting attendees with handouts (attached) summarizing their meeting agenda and their findings. Licensee representatives reviewed the sequence of events connected with the incident and discussed the short-term corrective actions already taken and the proposed long-term corrective actions.

The licensee stated that, although the data available at the time of the meeting indicated a substantial intake of alpha-emitting radiolnuclides, they did not at that time know the identity of the alpha-emitting radionuclides inhaled. The licensee stated that analyses to identify these radionuclides were in progress, but that the results would not be available for a week or two after the meeting. The licensee stated that they preferred not to discuss the magnitude of the intake until all the necessary data becomes available. The licensee also stated that they have contracted an independent expert to review the bioassay data and perform an independent calculation of the intake.

4.0 Concluding Statements

Following the licensee's presentations and a question and answer period, the NRC Region I management stated that they will review the root cause analysis presented by the licensee and the proposed corrective actions. NRC Region I management also stated that enforcement action regarding the apparent violations identified in the NRC Inspection Report and consideration of possible violations in connection with the intake of radioactive material will be deferred pending completion of the licensee's analyses. The decision will depend on, among other matters, NRC evaluation of the licensee's analyses and also on the magnitude of the intake.

LIMERICK GENERATING STATION

ENFORCEMENT CONFERENCE

UPTAKE OF RADIOACTIVE MATERIAL IN UNIT 1 REACTOR CAVITY

APRIL 10, 1992

AGENDA

INTRODUCTION	**D. M. SMITH** SR VP - NUC GROUP
OPENING REMARKS	**G. M. LEITCH** VP - LGS
SUMMARY OF EVENTS	**R. W. BRYAN** JOB LDR - NMD
ANALYSIS OF EVENT	**D. J. HORNE** ENG - NMD
CORRECTIVE ACTIONS	**W. A. TEXTER** **R. W. DUBIEL** SUPT - LGS PLT SERV
DISCUSSION OF APPARENT VIOLATION	**R. W. DUBIEL** **W. A. TEXTER** SUPT - NMD RX SERV
SAFETY SIGNIFICANCE	**R. W. DUBIEL**
CLOSING REMARKS	**G. M. LEITCH**

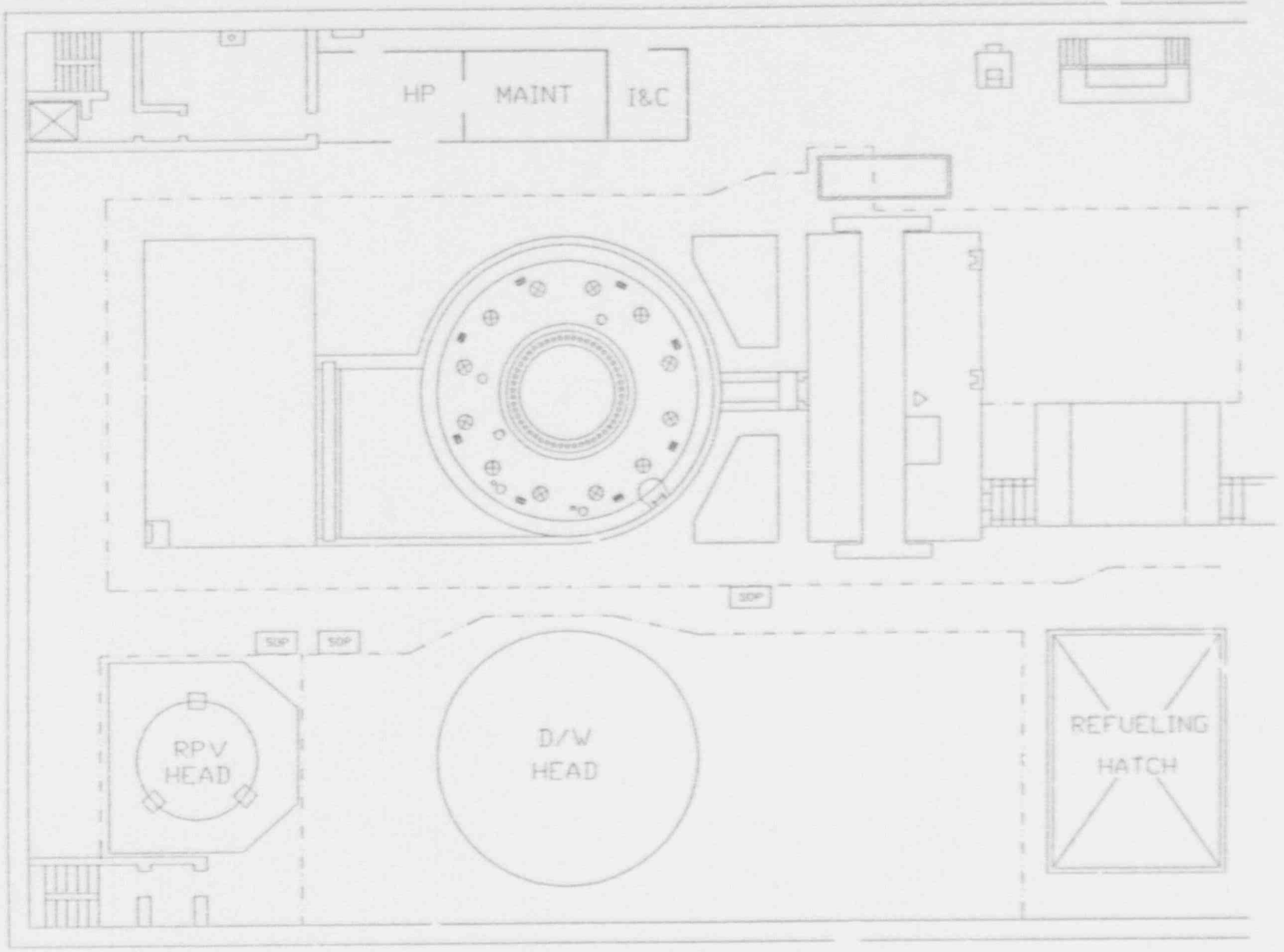
OPENING REMARKS

G. M. LEITCH

VICE PRESIDENT

LIMERICK GENERATING STATION

LIMERICK GENERATING STATION
UNIT 1 FUEL FLOOR AREAS



DISCUSSION OF ROOT CAUSES

POOR COMMUNICATION BETWEEN WORK GROUP AND HP

CONTRIBUTING FACTORS:

A. No reason for entry into Transfer Canal

B. Extent of planned activities not effectively communicated by work group to HP

C. Changes in established job scope not communicated to HP

D. HP did not thoroughly investigate reported inappropriate work practice

E. Expectations for LGS HP interface not clear

DISCUSSION OF ROOT CAUSES

POOR RAD WORKER PRACTICES

CONTRIBUTING FACTORS:

A. Mind set that everything must be removed from cavity

B. Rope and sign had been removed at an earlier time

C. Failure to adhere to RWP restrictions

D. Assumption made as to reason for "No Entry" sign

E. Self-induced pressure to get the job done efficiently

CORRECTIVE ACTIONS

COMMUNICATIONS

- Group Meetings
- Reinforcement of Expectations
- Dissemination of Results of Root Cause Analysis
- Development of Case Study for use in Continuing Training

CORRECTIVE ACTIONS

RAD WORKER PRACTICES

- Stationwide Standdown
- HP Supervisor Assigned to Assess Refuel Floor HP Operations
- Reinforcement of Expectations
- Individual Accountability

DISCUSSION OF APPARENT VIOLATION

- RWP Not Followed
- Maintenance Procedure Precaution
- Use of "No Entry" Sign

SAFETY SIGNIFICANCE

BIOASSAY ASSESSMENT

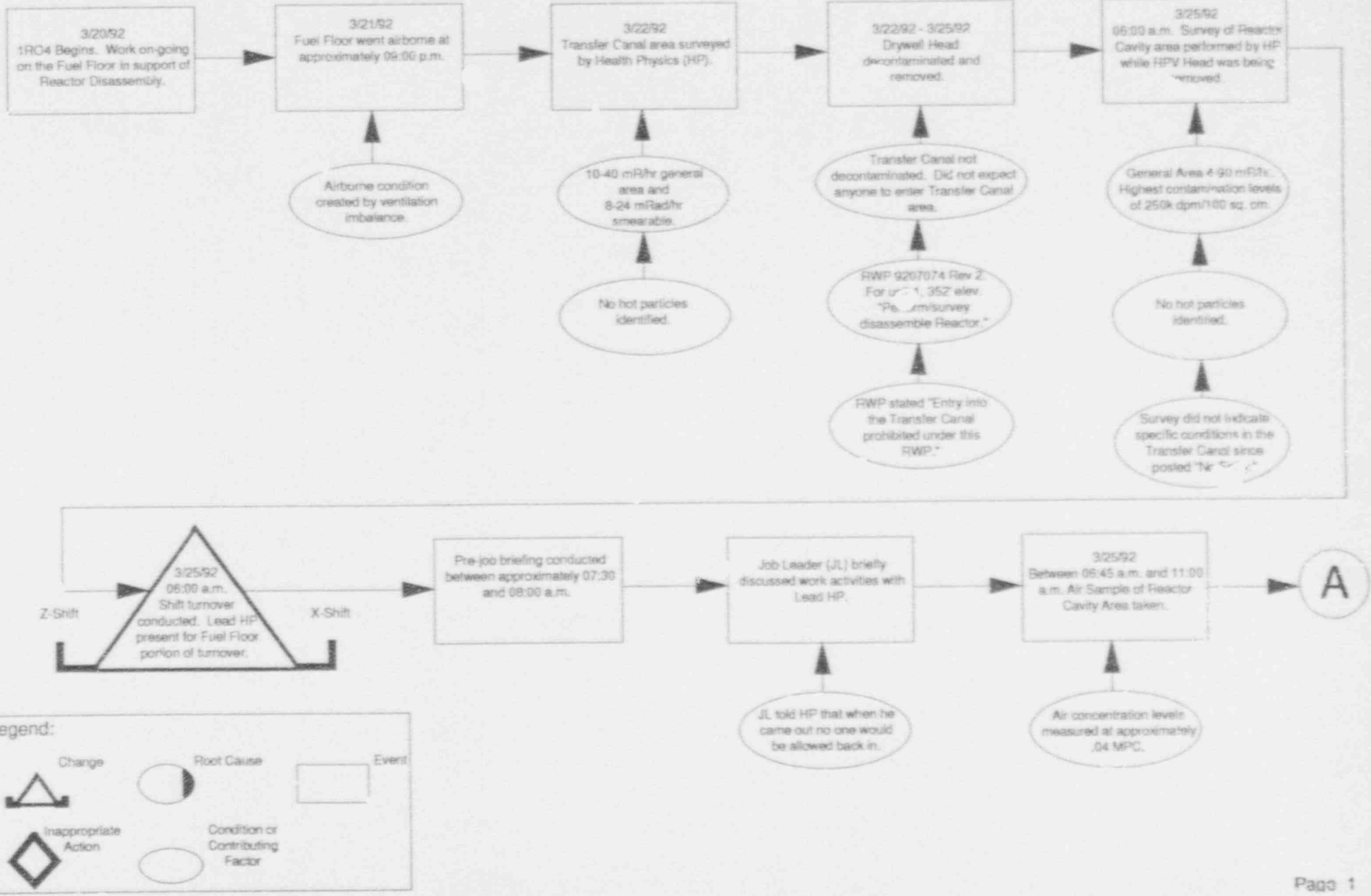
- WBC showed 836 nCi uptake
- Initial estimates for regulatory compliance
  - 100 MPC-hrs.
  - 200 mRem if 100% inhalation with deposition in the lung
- 90% of uptake was via ingestion pathway
- Ingested material was eliminated within two days
- Current dose estimates 12-20 mRem CEDE
- Alpha emitters identified in bioassay samples

CLOSING REMARKS

Mitigating Factors

- Self-identified incident
- Reportability immediately considered
- NRC Resident Inspector prcmptly notified
- Immediate corrective actions taken
- Thorough root cause analysis performed
- Comprehensive corrective actions
  - developed
  - promptly implemented
- Isolated occurrence
  - not indicative of past performance
  - not indicative of programmatic weakness

EVENT AND CAUSAL FACTORS CHART



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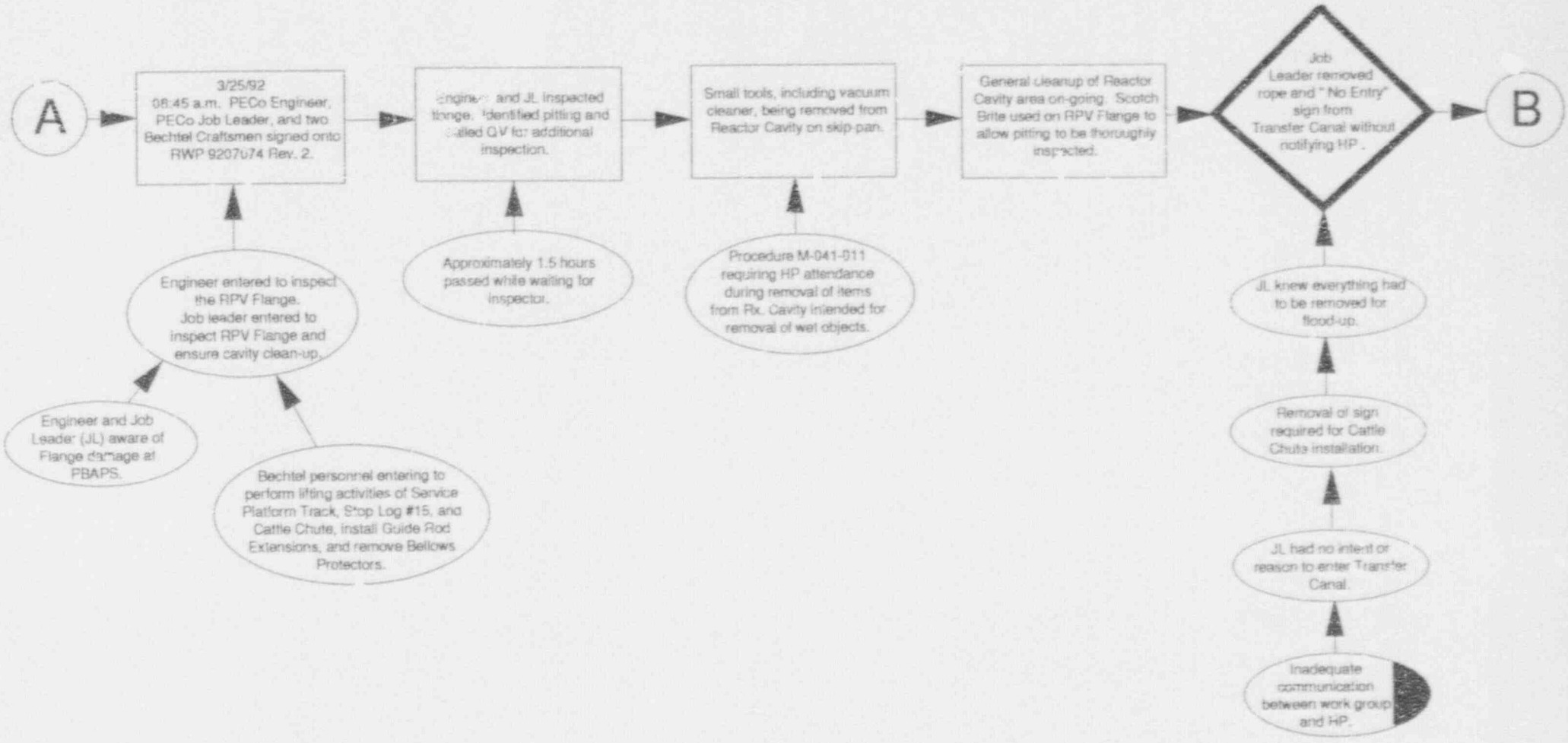

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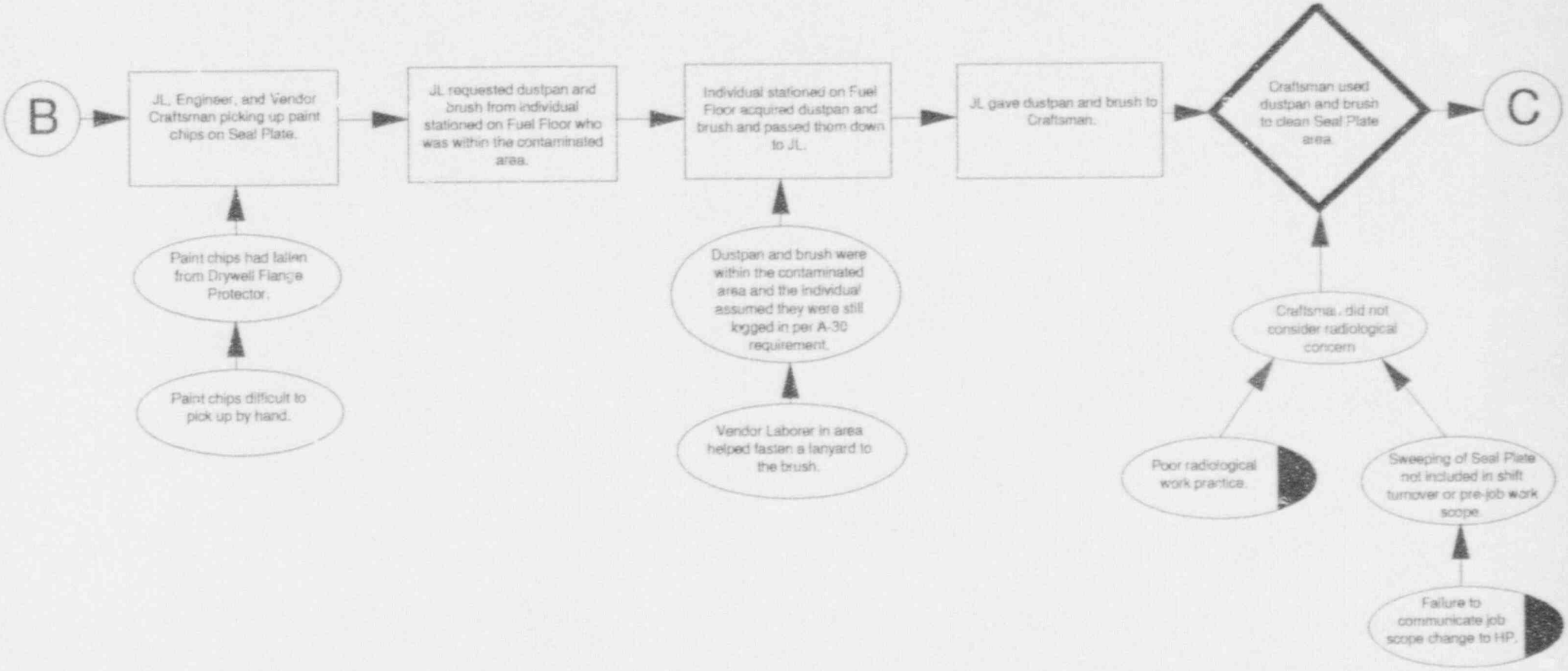

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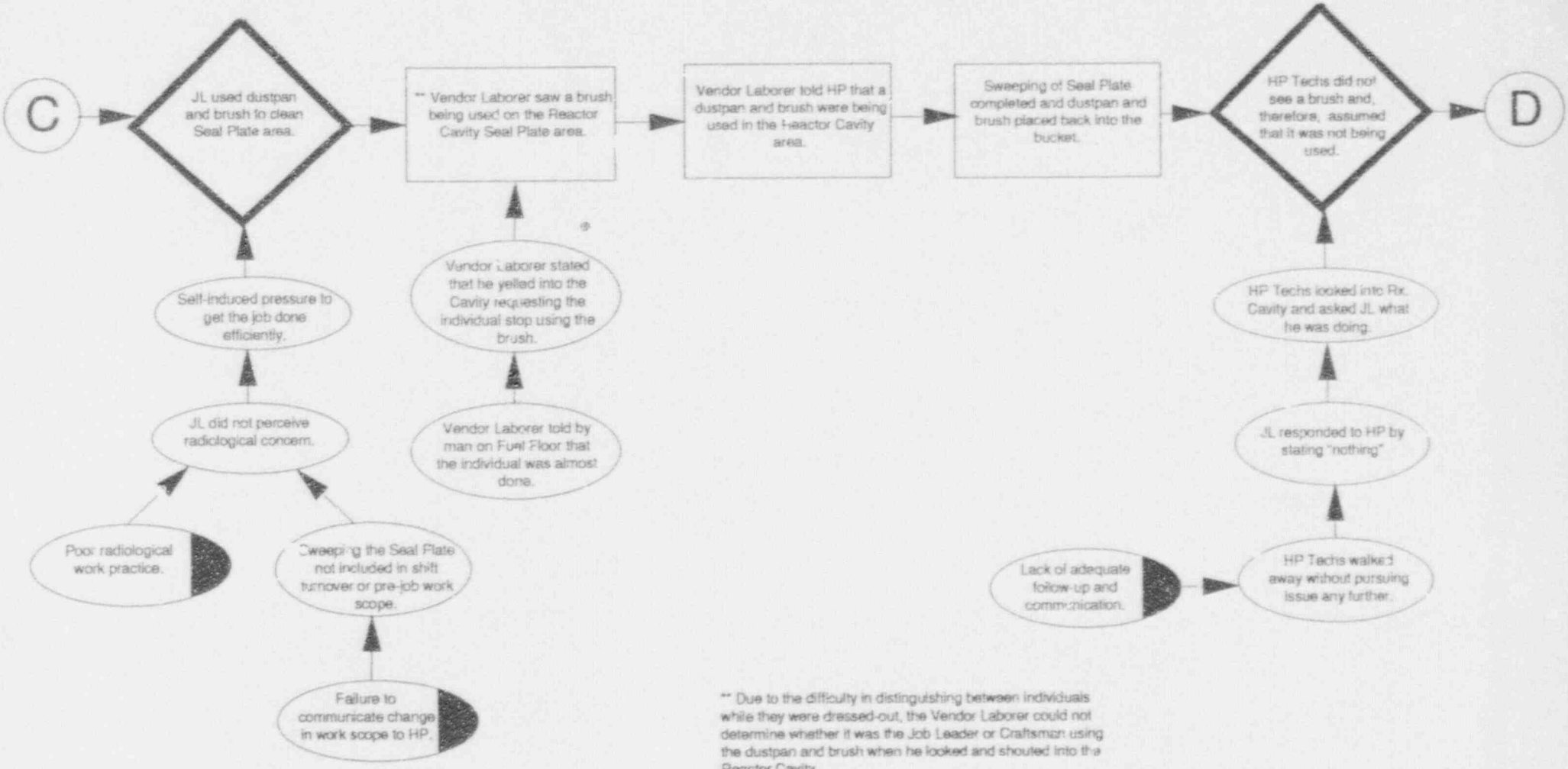
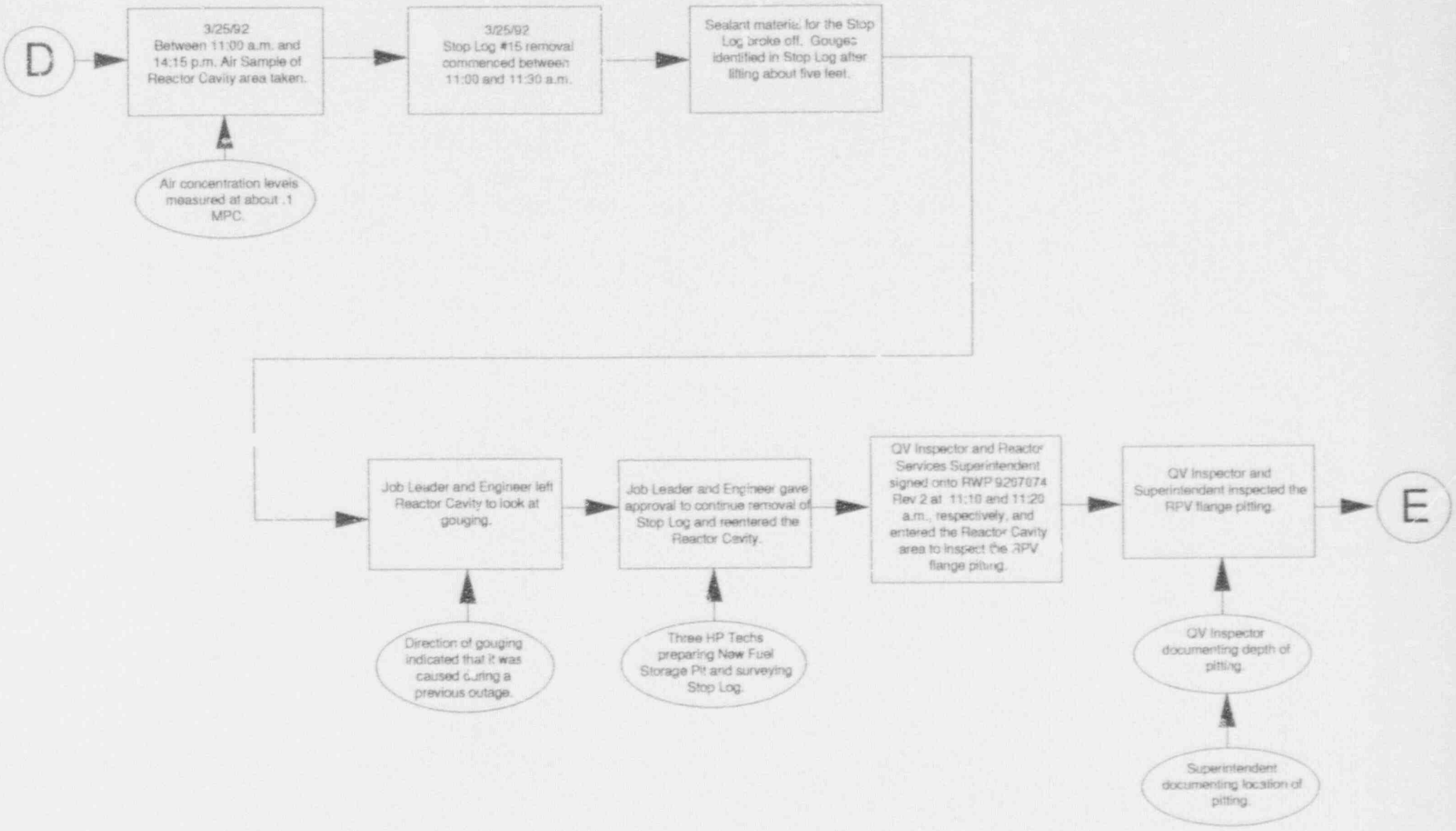


** Due to the difficulty in distinguishing between individuals while they were dressed-out, the Vendor Laborer could not determine whether it was the Job Leader or Craftsman using the dustpan and brush when he looked and shouted into the Reactor Cavity.

EVENT AND CAUSAL FACTORS CHART



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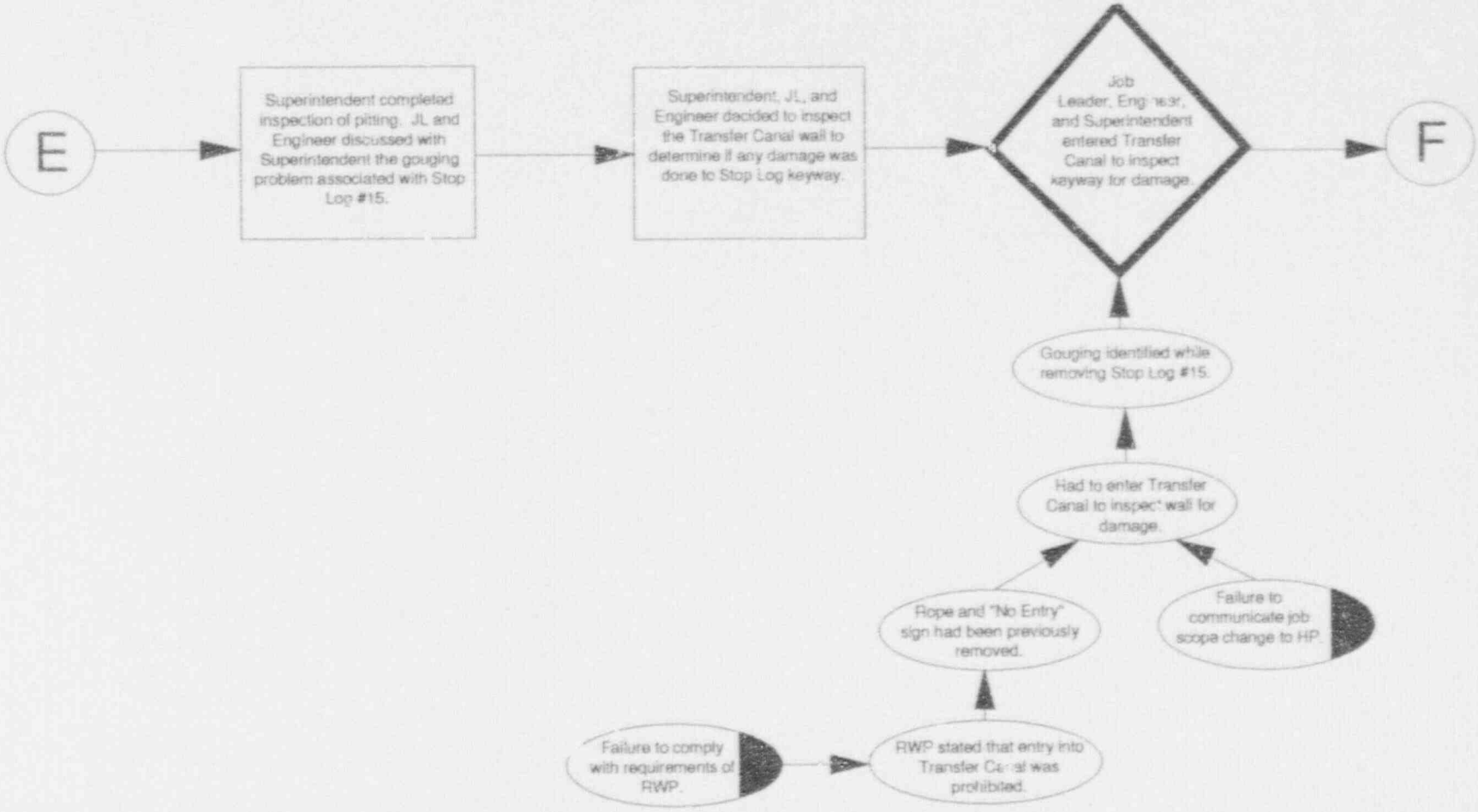

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