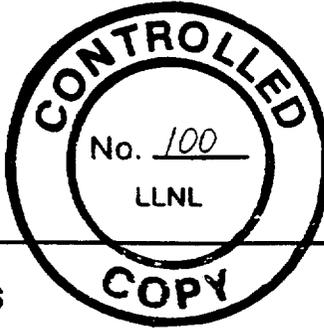


YUCCA MOUNTAIN PROJECT



No.: 033-YMP-QP 16.2  
Revision: 3  
Effective Date: 12/5/91  
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Subject: TREND ANALYSIS

Training Required: Yes  No

Comment:

Approved by: W. A. L. Lane 12/4/91  
2AB Yucca Mountain Project Leader Date

Approved by: Roy M. ... 12/4/91  
YMP Quality Assurance Manager Date

THIS REVISION INCORPORATES CN 16.2-2-1 AND CLARIFIES THE TREND ANALYSIS REPORT PERIOD AND DUE DATE.

16.2.1 PURPOSE

The purpose of this procedure is to describe the methods used for Trend Analysis for LLNL-YMP.

16.2.2 SCOPE

This procedure applies to the analysis of information contained in the following documents:

- LLNL-YMP Corrective Action Reports (CARs)
- LLNL-YMP Nonconformance Reports (NCRs)
- Subcontractor furnished documents that identify deficiencies in LLNL-YMP's QA Program
- Other externally originated documents that identify deficiencies in LLNL-YMP's QA Program (i.e. YMPO CARs)

The relationship between CARs, NCRs, and Trends is shown in Exhibit C of Procedure 033-YMP-QP 16.0.

The purpose of the analysis of this information is to:

- a. Identify and categorize root causes;
- b. Identify repetitive conditions or trends;
- c. Determine effects of identified trends; and
- d. Identify corrective measures.

16.2.3 RESPONSIBILITIES

The YMP QA Manager is responsible for the implementation of requirements specified in this procedure.

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## 16.2.4 PROCEDURE

### 16.2.4.1 Collection and Analysis of Data

The YMP QA Manager reviews Corrective Action Reports, Nonconformance Reports, Adverse Finding Reports, Subcontractor or other externally originated documents that identify deficiencies in LLNL-YMP's QA Program. Pertinent information is entered into a database for analysis and identification of any trends that may have developed. (Trend Analysis Database Codes are provided in Appendix A.) **Trend Analysis will be conducted on a calendar year basis.**

### 16.2.4.2 Reporting the Results of Trend Analysis

The YMP QA Manager issues a report of the results of Trend Analysis activities at least annually to the following personnel:

- a. YMP Leader/Technical Project Officer;
- b. Associate/Assistant Project Leaders;
- c. Technical Area Leaders;
- d. Task Leaders; and
- e. Project Administrator.

**The trend analysis report will be issued within two months of the end of the calendar year.**

### 16.2.4.3 Corrective Actions

Upon identification of a trend, as defined below, the YMP QA Manager makes a determination as to whether it is necessary to initiate a Corrective Action Report. Corrective Action Reports are processed in accordance with QP 16.0, "Corrective Action". If the YMP QA Manager determines that initiation of a Corrective Action Report is not necessary, justification shall be provided in the Trend Analysis report.

A trend is considered to exist when any of the following conditions are identified:

- a. six or more common cause events within the previous twelve months for the LLNL-YMP project;
- b. three or more common cause events within the previous twelve months for a specific organization within the project (i.e., Project Management/Administration, QA, Technical Areas, Subcontractors, etc.).

### 16.2.4.4 Contents of Trend Analysis Report

The Trend Analysis Report shall contain the following information as a minimum:

- a. Trend Analysis period
- b. Trends identified (if any)
- c. Reference to Corrective Action Report initiated (if any)
- d. Justification (if initiation of a Corrective Action Report is determined to be unnecessary)

## 16.2.5 RETAINED DOCUMENTATION

The Trend Analysis reports are QA Records and are submitted to the Local Records Center for retention in accordance with QP 17.0, "QA Records".

APPENDIX A

Trend Analysis Database Codes

**DOCUMENT TYPE:**

- NCR LLNL Originated Nonconformance Report
- AFR LLNL Originated Adverse Finding Report
- CAR LLNL Originated Corrective Action Report
- ECA Externally Originated Corrective Action Document
- CCA Subcontractor Furnished Corrective Action Document
- SDC Surveillance Deficiency Corrected During the Surveillance
- A D C Audit Deficiency Corrected During the Audit

**EFFECT CODES:**

- 1 1 Data or information lost/unusable
- 1 2 Item unusable
- 2 1 Data unreliable; additional analysis or confirmation required before further use
- 2 2 Item requires rework or repair
- 2 3 Item usable-as-is
- 3 1 Repeat work activity (all or part)
- 3 2 Commitment date missed or modified
- 4 1 No discernible effect

**ROOT-CAUSE CODES:**

- 1 0 1 No approved procedure
- 1 0 2 Procedure not implemented
- 1 0 3 Inadequate procedure
- 1 0 4 Procedure noncompliance
- 2 0 1 Inadequate indoctrination, training, or qualification of personnel
- 2 1 0 M&TE not calibrated
- 2 1 1 M&TE out of calibration
- 2 1 2 M&TE out of tolerance

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- 301 Design deficiency (hardware only)
- 302 Planning deficiency (inadequate, plan not followed)
- 401 Inadequate or missing documentation or records
- 402 Traceability not maintained/verified
- 501 Other (provide explanation)

**ORGANIZATION CODES:**

- 1000 Program Management/Administration
- 2000 Quality Assurance
- 3000 Near Field Environment Characterization Technical Area
- 5000 Materials Testing and Characterization Technical Area
- 6000 Waste Form Characterization Technical Area
- 7000 Performance Analyses Technical Area
- 8000 Engineering and Systems Analyses Technical Area
- 9001 ANL
- 9002 PNL
- 9003 B&W
- 9004 LLNL-ME/EM&A Calibration Lab
- 9005 LLNL-EE/ESG Calibration Lab
- 9999 Other (provide explanation)