SANDIA NATIONAL LABORATORIES
QUALITY ASSURANCE PROCEDURE (QAP)
QAP 16-1

WASTE ISOLATION PILOT PLANT (WIPP)

TREND ANALYSIS PROGRAM

Revision B

Effective Date: June 28, 1991

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1. PURPOSE

The purpose of this procedure is to describe the system and method used to analyze audit findings and nonconformance reports. It is a tool to assist in identifying and preventing recurring problems which affect quality.

2. SCOPE

This QAP applies to all activities conducted by Sandia National Laboratories in support of the Waste Isolation Pilot Plant (WIPP). The SNL Trend Analysis Program, as outlined in this procedure provides a method to analyze information for trends, provide management with trend information and will eventually provide historical information on quality problems.

3. REFERENCES

DOE/AL Order 5700.6B, section 4.6

DOE/WIPP 87-007 Operations Quality Assurance Program

Sandia National Laboratories, WIPP Quality Assurance Program Plan (SNL QAPP), section 16.4

4. DEFINITIONS

4.1 Causal Codes. A breakdown of QA items by origin and root cause.

4.2 Root Cause. The primary cause of an activity, that if corrected, will prevent recurrence.

4.3 Significant Trend. A noticeable or measurably large trend, probably caused by something other than mere chance.

4.4 Trend Analysis. The analysis of data to determine repetitive conditions, whether positive or negative, that may constitute a trend.

4.5 Trend Codes. A method of clustering QA items by the 18 elements of NQA-1.

5. RESPONSIBILITIES

The QA Chief shall assign/review the appropriate codes, perform the analysis and report the outcome to management. The trend analysis program, as a minimum, will be performed annually by the QA Chief.

6. PROCEDURE

6.1 Review of Documents.

6.1.1 The originator of an NCR assigns the appropriate trend and causal codes at the time of disposition. The QA Chief receives copies of all NCR's and can review the codes. If there is a code designation disagreement between the originator and QA, the Department Manager will resolve the issue.

6.1.2 The QA Chief will review audit findings and assign appropriate codes. Because there is more documentation associated with an audit finding, the codes may be assigned at the time of the analysis.

If a document cites multiple deficiencies, which are attributable to one or more causes, each separate type of deficiency will be cited.

6.1.3 Appendix A - Trend Codes and Appendix B - Causal Codes, list the designations for each type of deficiency.

6.2 Database Establishment and Maintenance.

6.2.1 Using commercial software, such as DBase III+ or Lotus 123, a database shall be established for the quality documents listed in 6.1.1. Database fields may include: document number, location, responsible organization, name of item/activity, trend codes and causal codes.

6.2.2 The database will be updated before any analysis is performed.

6.3 Analysis

6.3.1 The database will be indexed and reviewed by the QA Chief on the minimum following fields: trend code and causal code.

6.3.2 Histograms will be developed for significant deficiency trends.

6.3.3 The QA Chief shall review the deficiency distribution and identify significant clusters of problems; e.g., groups of problems of the same type, same organization, or similar items sharing the same causal factors.

6.4 Reporting

6.4.1 The QA Chief will annually prepare a trend analysis report. The report shall include as appropriate:

- *boundary dates for the information analyzed,*
- *identification of the most frequent types of problems, causal factors and nonconforming activities.*
- *any supporting graphics*
- *discussion about and recommendations for improving performance.*

6.4.2 The distribution for the report will include: NWTD Manager and division supervisors.

6.4.3 The trend analysis report is a permanent record and will be turned over to the Master Records Center (MRC) in accordance with SNL QAP 17-1.

6.5 Management Action

6.5.1 The results of this analysis will give management information that can be used for assessing their respective areas. This information can address negative trends, as well as positive ones. It is up to management to decide the specific action steps to take.

APPENDIX A
TREND CODES

Code	Trend
01	Organization
02	QA Program
03	Design Control
04	Procurement Document Control
05	Instructions, Procedures or Drawings
06	Document Control
07	Control of Purchased Items and Services
08	Identification and Control of Items
09	Control of Processes
10	Inspection
11	Test Control
12	Control of Measuring and Test Equipment
13	Handling, Storage and Shipping
14	Inspection, Test and Operating Status
15	Control of nonconforming Items
16	Corrective Action
17	Quality Assurance Records
18	Audits
19	Computer Software

APPENDIX B
CAUSAL CODES

Codes	Cause
A	Procedure/instruction not followed
B	Inadequate training
C	Lack of qualified personnel
D	Incorrect/lacking procedure or drawing
E	Inadequate procedure or drawing
F	Inadequate tools/equipment
G	Incorrect calibration
H	Instrumentation malfunction/failure
I	Incorrect material
J	Incorrect/missing documentation
K	Lack of contractual direction
L	Lack of management commitment
M	Lack of funding
N	Improper storage
O	Other
P	Vandalism