



UNITED STATES  
NUCLEAR REGULATORY COMMISSION

WASHINGTON, D. C. 20555

WM Record File

WM Project

101

Docket No.

PDR

LPDR

October 3, 1984

Distribution:

MEMORANDUM FOR: ~~Robert E. Browning, Director~~  
~~(Return to: WM 627-55)~~  
~~Division of Waste Management~~

FROM: F. Robert Cook, Senior On-Site Licensing  
Representative, Basalt Waste Isolation Project  
(BWIP)

SUBJECT: REPORT OF ACTIVITIES, OBSERVATIONS AND COMMENTS  
FOR THE PERIOD AUGUST 12 TO SEPTEMBER 15, 1984

1. During the week of August 12, 1984 I attended a training session in San Diego on, primarily, commercial nuclear codes and standards for quality assurance programs for reactors. The session was conducted by a consultant and an employee of GA Technologies Inc., P. S. Stuart and G. W. Chandler, respectively.

The session provided a satisfactory opportunity to become acquainted with the scope of various codes and standards used by the nuclear industry. The bases for various requirements or criteria were not consistently identified, particularly those associated with design control activities. I consider about half of the sessions were conducted in a manner to represent what I would best describe as an "industry vendor" point of view when interpretations of specific requirements and criteria came up for discussion. A conservative position as to application of QA requirements was not consistently presented during these particular sessions. In this regard I would not recommend those sessions for new QA trainees, since it may be difficult for them to perceive and account for the point of view noted above.

For future QA training, as well as other training, I recommend that we avoid enlisting the services of a consultant or school representing or part of the industry being regulated or dependent upon that industry for its existence. This will avoid real and/or apparant conflicts of interest.

I received a certificate of completion for the session. The final test with my answers is attached. The test questions are representative of the contents and details of the discussions of the entire session.

2. I documented the results of my observations at PNL during review of the MCC-D2 data package concerning leach characteristics of SRL 131 borosilicate glass. These observations were sent to DOE Richland Operations and Savannah River Operations per DOE request. These observations were also sent to M. J. Steindler and M. J. Bell. The observations are contained in Attachment B to this memorandum.

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3. The USGS late in August completed a seismic survey for DOE. I am attempting to obtain the test plan for the survey to understand its extent and objectives. However, per discussion with various DOE and RHO people I believe the following are pertinent facts:

A. The survey was intended to be a "refraction survey."

B. The USGS had a line of geophones from Moses Lake area to the North to an area South of the Horse Heaven Hills.

C. At least one explosion was set off on the Hanford reservation near the old townsite of White Bluffs. Other explosions were also conducted at other locations.

D. Other geophones and transducers for hydrologic studies were monitored /utilized to collect seismic data during the test.

These instruments include units manned by RHO people as well as those manned by the University of Washington (U of W) people. The data

from these instruments supplement the data collected by the USGS network of instruments.

E. Data were collected by the Hydrology group from transducers at various depths in boreholes and possibly peizometer tubes on the Hanford reservation. I understand these data were not collected per any formal test procedure and were obtained by increasing the recording frequency of the recorders attached to the transducers selected for monitoring. I understand that pressure variations were seen at a transducer or transducers near the explosion but not at a distance. I have not verified this report by observing the data, but intend to do so.

F. There are at least three analyses of the three geophone data sets (i.e., USGS, RHO and U of W) being accomplished or to be accomplished by about the end of February, 1985. One analysis is to be done by RHO, one by a student at U of W who works with the U of W seismic monitoring network, and one by a student at Stanford University who helped conduct the test for the USGS. The USGS has no contractual requirement to analyze the data. I do not know whether or not they have in their position copies of all three data sets.

Per discussion with M. Knapp I am going to request the data which RHO has for their analyses and forward it to the Staff to allow analysis in time for use in assessing a potential SCP for BWIP.

4. On August 31, 1984 I met with DOE Lawrence and his deputy, Goldberg. I have a list of ten items which I believe are important to discuss to understand the DOE/RLO point of view and to assure potential problems are flushed up as required for resolution. This list is Attachment C. I was only able to discuss item 1 before Lawrence was called out. I have another meeting scheduled for October 18, 1984.

5. I reviewed ELD's comments concerning the applicability of 10CFR Parts 19 and 21 to activities funded by DOE, concerning a high level waste repository intended for the disposal of

commercial high level waste. My comments are contained in Attachment D.

6. As a result of the review noted in 5. above and ELD's comments concerning the lack of the applicability of Part 19 to DOE contractors and subcontractors, I asked myself the question, "Who has the responsibility to regulate the some-120-odd BWIP contractors and subcontractors, some of whom are handling radioactive materials in their work under their contracts with DOE or RHO?" My question ranged from the prime contractors, RHO and Westinghouse, handling spent fuel and radioactive materials in design activities, to the geophysical investigators, both on and off the Hanford reservation, handling radioactive sources, to the manufacturer of the Exploratory Shaft casing doing radiographs of welds in Louisiana.

On September 6 and 7, 1984, I asked the the basic question noted above to DOE (Antonnen), Rockwell (Crawford, Lorenzini's deputy,) and Westinghouse (Nolan). None of the three had ever addressed the question of whether the Energy Reorganization Act of 1974 specified regulatory authority to NRC concerning materials handling and utilization facility construction and operation as to the high level waste repository on which they were all working, other than the regulations in Part 60. I pointed out that my understanding of Part 60 was that it contained regulations pertinent to obtaining a materials handling license for handling high level waste AT a geologic repository operations area as defined in Part 60 and EXEMPT DOE from obtaining materials handling licenses for other controlled materials being handled AT a geologic repository.

Antonnen said he thought DOE had the authority and responsibility for work on the Hanford reservation but did not conclude the contractor in Louisiana was regulated by DOE. He was not certain, however, as to the meaning of the Act and said he would ask the RLD lawyers and get back to me. I have not heard back from him to date.

Crawford fielded the question and indicated he was not certain about an answer. We talked for about 15 minutes concerning DOE and DOE contractor responsibilities as to State and NRC regulations. He indicated Rockwell was concerned about the issue and was currently investigating it separately. This confirmed what I already knew. He made a copy of Sec. 202 of the Act and thanked me for bringing the question to his attention and urged me to raise any other questions to them as I considered it appropriate.

Nolan did not consider any of the Westinghouse activities using radioactive materials for RHO waste package materials tests needed a license from the State or NRC. His conclusion seemed to be based on the idea that R&D work sponsored by DOE at the 300 Area, this being on the Hanford Site, was not subject to licensing by NRC, although he did not know where in the laws this

was provided. He did not consider that Section 202 of the Reorganization Act was intended to establish NRC authority based on the intended purpose of the activity, for example, a purpose associated with constructing a commercial repository, which is interpreted as a facility under #3 of Sec 202. I was not able to follow his logic in reaching this conclusion. Nolan did not indicate he would get back to me with a firm answer and I did not ask him to.

About a week after talking with Antonnen, Saget called and wanted me to explain the question to him since he was asked to look into it by Antonnen. I went to his office and a DOE lawyer, Carosino, also arrived. As it appeared the purpose of the meeting was for me to ask the question to Carosino who had been asked to get an answer for Antonnen. We discussed the question with Saget (Saget did not participate much) and I discussed it further in Carosino's office in additional detail the next day, which visit I initiated on my own to follow up on a question he raised the previous day and to see if I could further gain insight into his reasons.

Considering the context of my discussions with Carosino, I was lead to believe that the RLO legal group had never considered whether there was any other NRC regulations that could apply to the BWIP activities other than those contained in Part 60, except they had considered Part 21 applicability. (His position on Part 21 applicability was that it did not apply until after licensing--similar to ELD's conclusion.) Carosino's position throughout the conversations, however, was that no other regulations apply to the current BWIP activities. After my prodding him as to his logic for some time he indicated his position was consistent with conclusions of a friend at NRC. I asked him who his friend was. He declined to tell me.

7. I spent about 4 days out of the subject period expediting GSA, inspecting spaces, moving into new office spaces, accepting delivery of furniture, arranging telephone installation, etc. My address is 1955 Jadwin, Richland, Wa., 99352. My phones are 509-943-4669 and 509-943-9306 (messages only.)

8. I reviewed the Environmental Assessment Review Plan, June 22, 1984 version. I gave my comments over the phone to R. Johnson and C. Pflum. I was not certain who had the lead on resolving comments. My basic comment was that the OBJECTIVES AND RATIONAL paragraph, page 5, seemed to me to be ambiguous, since it was not clear what assessments and comparisons the staff would be doing. My comment is that it should be clear that assessments which compare either environmental issues, which must be assessed in an EIS, or licensing issues which, must be compared or addressed later during licensing, should be accomplished at the first opportunity, specifically during our EA review.

If we do not agree with the DOE assessments and methodology we should we say so now. Otherwise, silence would indicate agreement to DOE and it would not be expeditious to take issue

later in the process. It is apparant that the Commission's comments in concurring with the guidelines indicate that there is a NRC interest in the assessment methodology used to compare sites with respect to licensing or EIS issues.

151  
F. Robert Cook  
On Site Licensing  
Licensing Representative  
BWIP

cf:  
FRCook

Your Name (Please Print) F.R. COOK  
Today's Date 3/12/84

Attachment A  
RV

GA TECHNOLOGIES INC.  
QUALITY ASSURANCE CODES AND STANDARDS COURSE  
- FINAL EXAMINATION -

PART I - Multiple Choice (2 points each)

Choose the letter corresponding to the most correct answer.

1. Ethical behavior of a quality professional is described in a "Code of Ethics" published by the:
- a. American Society of Mechanical Engineers.
  - b. American Society for Quality Control.
  - c. American National Standards Institute.
  - d. American Nuclear Society.
  - e. None of the above.
2. Two categories of quality assurance records established by ANSI N45.2.9-1974 are:
- a. Permanent and Nonpermanent.
  - b. Lifetime and Nonpermanent.
  - c. Permanent and Temporary.
  - d. Lifetime and Temporary.
  - e. Lifetime and Nonlifetime.
3. Documents issued by NRC to provide guidance in implementing a quality assurance program are:
- a. "Daughter" standards.
  - b. The Rainbow Code.
  - c. Regulatory Guides.
  - d. The Federal Guide Series.
  - e. 10CFR50, Appendix B.
4. Section III, Division 2, of the ASME Code primarily concerns:
- a. Concrete Reactor Vessels and Containments.
  - b. All Pressure Vessels.
  - c. Class 1, 2, 3, and MC Components.
  - d. Inservice Inspection of Nuclear Power Plant Components.
  - e. None of the above.
5. A company which complies with ANSI/ASME N45.2-1977 invokes which of the following on its suppliers?
- a. The requirement for a quality assurance manual.
  - b. The requirement for a quality program complying with ANSI/ASME N45.2-1977, or consistent with applicable sections or elements of ANSI/ASME N45.2-1977, or with other requirements which meet the intent of ANSI/ASME N45.2-1977.
  - c. The requirement for a QA Topical Report.
  - d. All of the above.
  - e. None of the above.

6. For the purposes of ANSI N45.2.9-1974, a quality assurance document is considered a record when:
- a. It has been microfilmed.
  - b. It has been signed.
  - c. It has been issued.
  - d. It has been completed.
  - e. It has been stored.
7. How can an auditor who is planning to verify compliance to ANSI/ASME N45.2.2-1978 (packaging, shipping, etc.) determine which specific hardware items are to be controlled under N45.2.2?
- a. All safety-related items, as identified in the PSAR, are subject to N45.2.2 controls.
  - b. Any item that appears to the auditor to be sensitive to handling damage is subject to N45.2.2 controls.
  - c. ANSI/ASME N45.2.2 specifically describes which items are subject to its controls.
  - d. The specific items to be covered should be identified by the responsible company.
  - e. None of the above.
8. According to ANSI N45.2.13-1976, the right of a Purchaser or designated representative to enter the premises of a Supplier for the purpose of inspection, surveillance, or quality assurance audit is referred to as:
- a. Right of Eminent Domain.
  - b. Right of Access.
  - c. Right of Assurance.
  - d. Owner's Prerogative.
  - e. Miranda Rights.
9. ANSI N45.2.11-1974 prescribes at least three options for verifying design adequacy. Which of the following is not mentioned in N45.2.11?
- a. The use of alternate or simplified calculational methods.
  - b. The performance of a suitable testing program.
  - c. The performance of design reviews.
  - d. Inservice inspection and analysis of the installed product of design.
10. Documentation verifying the acceptability of nonconforming items which have the disposition \_\_\_\_\_ or \_\_\_\_\_ is required by ANSI/ASME N45.2-1977.
- a. Rework or Repair.
  - b. Use as is or Repair.
  - c. Use as is or Rework.
  - d. Reject or Repair.
  - e. Rework or Reject.
11. 10CFR50, Appendix B requires measures to assure that the cause of the condition be determined and corrective action taken to preclude repetition for:
- a. All nonconformances.
  - b. Significant conditions adverse to quality
  - c. Nonconforming conditions which have the disposition "Repair" or "Use As Is."
  - d. Conditions for which material review action is required.
  - e. None of the above.

12. A company's QA Program is implemented by:

- a. The Quality Assurance organization.
- b. All organizations, from top management down.
- c. Design, Manufacturing, Construction, and Testing organizations only.
- d. The Owner's organization, but not the Constructor's.
- e. First-line management, with progress reports to higher management.

13. ANSI/ASME NQA-1-1979 sets forth requirements and nonmandatory guidance for the establishment and execution of quality assurance programs during the design, construction, and operation of nuclear power plants. This document:

- a. Is an industry consensus type document which has not yet been endorsed by the NRC.
- b. Is based on the contents of ANSI/ASME N45.2 and the "daughter" standards N45.2.6, N45.2.9, N45.2.10, N45.2.11, N45.2.12, N45.2.13, and N45.2.23.
- c. Is copyrighted by the American Society of Mechanical Engineers.
- d. All of the above.
- e. None of the above.

14. A source for recommended training courses in ultrasonic and liquid penetrant examination would be:

- a. ASME Code Section IX.
- b. SNT-TC-1A.
- c. Criterion 9 of 10CFR50, Appendix B.
- d. ASQC Training Directory.
- e. All of the above.

15. A precaution against allowing carbon steel rigging equipment to come in contact with stainless steel except when attached to lifting lugs, eyes, or pads is included in:

- a. ANSI/ASME N45.2.2-1978.
- b. ASME Code Section VIII.
- c. ANSI/ASME N45.2.9-1974.
- d. ANSI/ANS-3.2-1982
- e. ANSI/ANS-3.1-1981.

16. Which of the following requires the contractor to maintain and use quality cost data as a management element of the quality program?

- a. 10CFR50, Appendix B.
- b. SNT-TC-1A.
- c. ANSI/ASME N45.2-1977.
- d. MIL-Q-9858A.
- e. None of the above.

17. Which of the following is not a provision of ANSI/ANS-3.2-1982?

- a. The causes of malfunctions shall be promptly determined, evaluated, and recorded.
- b. Housekeeping practices shall be utilized for the control of radiation zones.
- c. Nonconforming items shall be reviewed and accepted, rejected, repaired, or reworked in accordance with documented procedures.  
(See Next Page)

*EAS*  
*Ans*  
*OK*  
*Per Richards*

- Provisions shall be made for preparation and retention of plant records.  
 e. Technicians should possess a high degree of manual dexterity and ability and should be capable of learning and applying basic skills.
18. The basic Quality Assurance program requirements for fabricators of ASME Code Section III, Division 1, components are contained in:
- a. Division 1, Appendix X.
  - b. Article NCA-3800.
  - c. Subsection NG.
  - d. Subsection NF.
  - e. Article NCA-4000.
19. Which of the following is a requirement for a Lead Auditor (per ANSI N45.2.23-1978, "Qualification of QA Program Audit Personnel")?
- a. High School education.
  - b. Bachelor's degree.
  - c. At least one year of experience as an auditor..
  - d. He shall pass an examination.
  - e. Experience in the area he is auditing.
20. Which of the following best describes the amount of quality verification a Purchaser must perform (according to ANSI N45.2.13-1976, "Requirements for Control of Procurement of Items and Services")?
- a. A written inspection instruction shall be prepared for each safety-related item.
  - b. Safety-related items shall be tested or measured for each measurable characteristic.
  - c. Safety-related items shall be inspected upon receipt and shall be checked to be sure they work prior to installation.
  - d. Source verification, receiving inspection, certificates of conformance, post-installation testing at the site, or a combination thereof may be used to accept items or services.
  - e. None of the above.
21. 10CFR Part 21 specifically requires reporting of:
- a. Unusual Occurrences.
  - b. Deviations.
  - c. Defects and Noncompliance.
  - d. Significant Nonconformances.
  - e. Significant Events.
22. Which of the following is required by ANSI N45.2-1977 regarding document control?
- a. Review for adequacy. ✓
  - b. Approve for release: ✓
  - c. Use at location where the prescribed activity is performed.
  - d. Controls apply also to changes.
  - e. All of the above.

23. When compliance with ANSI N45.2.6-1978 is required, it applies to:

- a. Inspection personnel.
- b. Personnel who perform tests to verify conformance to specified requirements.
- c. Design engineering personnel.
- d. a. and b. above.
- e. None of the above.

*It may apply if they design inspect.*

24. ANSI/ASME NQA-1-1979, "Quality Assurance Program Requirements for Nuclear Power Plants" has been endorsed as "the preferred standard for quality assurance" by:

- a. 10CFR50, Appendix B.
- b. NRC Regulatory Guide 1.28, Revision 4.
- c. DOE 5700.6A (ORDER)
- d. RDT F2-2.
- e. None of the above.

25. ANSI N45.2.9-1974 requires the performance of audits to assure that:

- a. The quality assurance records storage system is effective.
- b. The records system is effective.
- c. The information management system is effective.
- d. The document control system is effective.
- e. None of the above.

26. ANSI N45.2.11-1974 requires:

- a. A comprehensive system of planned and documented audits.
- b. Appropriate corrective action and timely follow-up action.
- c. Documented procedures for design changes, including field changes.
- d. Verification of the adequacy of design.
- e. All of the above.

27. Acceptance of a procured item solely by receiving inspection is satisfactory, according to ANSI N45.2.13-1976, when the item is:

- a. Relatively simple and standard in design, manufacture, and test.
- b. Adaptable to standard or automated inspections and/or tests of the end product to verify quality characteristics after delivery.
- c. Such that receiving inspection does not require operations which could adversely affect the integrity, function, or cleanness of the item.
- d. All of the above.
- e. None of the above.

*Pool  
quality  
task*

28. ANSI/ANS 3.1-1981 "American National Standard for Selection, Qualification, and Training of Personnel for Nuclear Power Plants", requires which of the following as one of the prerequisites for appointment to the position of Nuclear Power Plant Manager?

- a. A recognized masters level degree in an engineering or scientific field generally associated with power plants.
- b. At least ten years of actual power plant experience.
- c. At least four years of nuclear power plant experience.
- d. At least one year of experience at the Senior Reactor Operator's level.
- e. At least four years of supervisory or management experience.

29. Which of the following records are required by ASME Code Section III, Subsection NCA, Article NCA-4000?
- a. Certified Design Reports or stress calculations.
  - b. Data Reports.
  - c. An index to the permanent record file.
  - d. All of the above.
  - e. None of the above.
30. Controlled document changes require which of the following, as specified by 10CFR50, Appendix B?
- a. They shall be reviewed and approved by the same organizations that performed the original review and approval, unless the applicant designates another responsible organization.
  - b. They shall be reviewed and approved by the same organizations that performed the original review and approval, unless the applicant employs an acceptable verification test as an alternative.
  - c. They shall be reviewed and approved by the same organizations that performed the original review and approval, unless a singular design approach was used by a design supervisor and an alternate has been designated.
  - d. None of the above.
  - e. All of the above.

PART II - True or False (1 point each)

Circle the appropriate letter (T or F)

- |  |   |                                    |     |
|--|---|------------------------------------|-----|
| 1. 10CFR50, Appendix B specifies that activities affecting quality shall be prescribed by documented instructions.         | T | <input checked="" type="radio"/> F | ok. |
| 2. The objectives of the quality assurance program must be separate and independent from management objectives.            | T | <input checked="" type="radio"/> F | ✓   |
| 3. ANSI N45.2-1977 is a Government standard.   | T | <input checked="" type="radio"/> F | ✓   |
| 4. The quality assurance program becomes effective as soon as the design is released.                                      | T | <input checked="" type="radio"/> F | ✓   |
| 5. The American National Standards Institute (ANSI) is funded by the Federal Government.                                   | T | <input checked="" type="radio"/> F | -   |
| 6. An engineer in a design organization cannot perform quality assurance tasks because he is not separate and independent. | T | <input checked="" type="radio"/> F | ✓   |
| 7. A company doing work on a nuclear component that is safety-related must have a Quality Assurance Manual.                | T | <input checked="" type="radio"/> F | ✓   |

8. According to the packaging, preservation, and shipping provisions of Appendix B, safety-related items intended for outside storage at the site must be double-poly wrapped until installed.

T

F

9. Holders of permits for construction or operation of a nuclear power reactor are required by law to report to the Government certain types of deficiencies.

T

F

10. 10CFR50, Appendix B, requires the quality assurance organization to be cost-effective.

T

F

11. The reason a quality assurance program is established for a nuclear power plant is because it helps in the licensing process.

T

F

12. According to ANSI N45.2.2-1978, safety-related items require level A protection.

T

F

13. 10CFR50, Appendix B is applicable to fuel reprocessing plants.

T

F

14. 10CFR50, Appendix B requires every applicant for a construction permit for a nuclear power plant to include a description of the quality assurance program in its PSAR.

T

F

15. Under the provisions of 10CFR21, the maximum penalty for failure to provide required notices of deviations is \$25,000 for all such failures to notify within 30 consecutive days.

T

F

16. 10CFR21 requires that applicable procurement documents specify that the provisions of 10CFR21 apply.

T

F

17. NQA-1-1979 has been endorsed by the NRC via a Regulatory Guide.

T

F

18. ANSI/ANS-3.1-1981 provides criteria for the selection and training of personnel for stationary nuclear power plants.

T

F

19. When traceability is required, items must be serialized.

T

F

20. Final radiographs need not be microfilmed, according to ASME Code Section III, Subsection NCA, Article NCA-4000.

T

F

21. ANSI N45.2 and several of the "daughter" standards were used to develop NQA-1-1979.

T

F

22. The International Atomic Energy Agency document "Safety Code of Practice on Quality Assurance" was reviewed by a multi-national technical committee, excluding "iron curtain" country representation.

(T) F -1

23. A supplier whose quality assurance system has been surveyed by a lead auditor and found to be consistent with the requirements of MIL-Q-9858A may be used for procurement of safety-related nuclear power plant items, providing ASME Code requirements are not applicable.

ok (T) (F)

24. Lead Auditors must pass an examination to qualify as such, according to ANSI N45.2.23-1978.

(T) F

25. The Independent Review Program required by ANSI/ANS-3.2-1982 shall be functional prior to initial core loading.

(T) F

26. ANSI/ANS-3.2-1982 is published by the American Society of Mechanical Engineers.

T (F)

27. ANSI/ANS-3.1-1981 does not require the Operations Manager of a Nuclear Power Station to have a Bachelor's Degree in Engineering.

(T) F

28. The objective for a good QA auditor is to find problems, and he should approach an auditing assignment with the conviction that he will find them.

(T) F

29. ANSI N45.2.6-1978 applies to individuals who perform inspection, examination, and testing activities (including nondestructive examinations such as ultrasonic examinations) of safety-related nuclear power plant items.

(T) F -1

30. ANSI N45.2.11-1974 applies to design activities of the plant owner, NSSS designer, architect engineer or plant designer, and other organizations participating in design activities affecting the quality of safety-related items and other items specified by the purchaser.

(T) F

31. To provide guidance regarding the types of records subject to its requirements, ANSI N45.2.9-1974 includes an Appendix (A) of typical quality assurance record categories.

(T) F

Chandler gave me this time after discussion

well poor question  
asked  
owner  
QA answer is probably false.

MA'S  
has  
thought

RA

1/70

32. The requirements of the ASME Boiler and Pressure Vessel Code are considered in developing the ANSI N45-series of standards.

(T) F

33. Criterion II of 10CFR50, Appendix B contains requirements for indoctrination and training.

(T) F

34. ANSI/ANS-3.2-1982 addresses administrative controls and quality assurance requirements for the operational phase of nuclear power plants.

(T) F

35. The ASME Boiler and Pressure Vessel Code is adopted, in part or in its entirety, by all the United States, seven Provinces of Canada, and several municipalities.

T (F)

36. Section III, Division 1, of the ASME Code is published by the American Nuclear Society.

T (F)

37. The ASME Code is more than 65 years old.

(T) F

38. Nuclear steam supply system (NSSS) designers are exempt from the provisions of the ANSI "daughter" standards.

*depends on case*

*Not universal however*

(F)

39. ANSI N45.2.9-1974 requires microfilming of key quality assurance records.

T (F)

40. When product quality levels drop, one positive approach to corrective action is to hire more inspectors.

(T) F

*poor question personal opinion  
QA probably say no -  
would have helped  
in case of Marble Hill.*

1