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APR 26 1995

ENGINEERING DATA TRANSMITTAL

Page 1 of 1

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RELEASE AUTHORIZATION

Document Number:	WHC-SD-WM-TI-696, REV 0
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This document was reviewed following the procedures described in WHC-CM-3-4 and is:

APPROVED FOR PUBLIC RELEASE

WHC Information Release Administration Specialist:

Kara M. Broz — April 26, 1995

SUPPORTING DOCUMENT

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2. Title	3. Number	4. Rev No.
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5. Key Words	6. Author
Technical Description, 296-B-10, Annual System Assessment Report, B Plant	Name: T M. Ridge Signature: T M Ridge 4/25/95 Organization/Charge Code 16610-KBBE3

7. Abstract

This document is an annual assessment report of the systems associated with the 296-B-10 stack.

8. RELEASE STAMP

RECORD OF REVISION

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(3) Revision	(4) Description of Change - Replace, Add, and Delete Pages	Authorized for Release	
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296-B-10 Stack Monitoring and Sampling System

Annual System Assessment Report

Prepared by T. M. Ridge
B Plant Environmental Engineering

April 1995

TABLE OF CONTENTS

STACK 296-B-10 SAMPLING AND MONITORING ANNUAL SYSTEM ASSESSMENT REPORT

I. Scope

B Plant Administration Manual, WHC-CM-7-5, Section 5.30 requires an annual system assessment to evaluate and report the present condition of the sampling and monitoring system associated with stack 296-B-10 (System Number C97A) at B Plant.

II. Summary Evaluation

The sampling and monitoring system associated with stack 296-B-10 is functional and performing satisfactorily.

III. System Description

A. System Flow Configuration

The ventilation system of WESF is designed to provide airflow patterns so that air movement throughout the building is from areas of lesser radioactivity to areas of greater radioactivity. All potentially contaminated areas are maintained at a negative pressure with respect to the atmosphere so that air flows into the building at all times.

The K-1 Heating, Ventilation, and Air Conditioning (HVAC) system provides ventilation for the high-risk operating and service areas with contaminated air being filtered through the K-1 filter building. The K-3 HVAC system provides ventilation for the highly contaminated process cells and the canyon area. The K-4 HVAC system provides ventilation for the capsule storage pool area, and the air is filtered through the K-1 filter building.

The K-1 system is designed to supply 4,020 liters/s (8,514 cfm) outside air on a once-through basis (no recirculation) to the 225-B Building HVAC room. The supply air is filtered through a 80% National Bureau of Standards (NBS) filter and heated or cooled appropriately and distributed through a duct network to the serviced areas. A similar duct network provides an exhaust flowpath from these areas. Air balance control and optional isolation of the rooms is accomplished by manually-controlled dampers in all supply and exhaust ducts.

The K-3 outside air supply system is designed to provide 3,055 liters/s (6,470 cfm) of air to process cells to maintain air flow from areas of lesser to higher contamination in the canyon and process cells. The system provides ventilation for the contaminated process cells and canyon area and is designed to meet two sets of operating conditions:
1) routine operation, when cell cover blocks are in place; and
2) nonroutine operation, when one or more cover blocks are removed from a cell to provide access to the process cells.

The K-3 supply air from the WESF HVAC room is distributed via ductwork to the canyon area on a once-through basis. A portion of this ventilation air enters each cell via one of two 15.2 cm-dia. (6-in.-dia.) stainless steel ducts that are imbedded in the canyon floor. The air going to the process cells from the canyon is drawn through one stage of High Efficiency Particulate Air (HEPA) filters before it enters the cells.

The K-4 system supplies approximately 3,927 liters/s (8,320 cfm) of ventilation air to the storage pool area on a once-through basis. The air supply equipment, which consists of a bank of 8% and 35% National Bureau of Standards (NBS) filters, a preheat coil, an evaporative cooler, a reheat coil, and a centrifugal fan, are located on the roof of the storage pool area. The supply air enters the storage pool area at 21.1°C (70°F) and is distributed throughout the area. Approximately 113 liters/s (240 cfm) of ventilation air is distributed under the cover blocks of the pool cells via a 61 cm-dia. (24-in.-dia.) duct to the K-1 filter building.

B. Stack Sampling and Monitoring System

The exhaust discharging through the 296-B-10 stack is continuously monitored and sampled using a sampling and monitoring probe assembly located approximately 17.4 meters (57 feet) above the base of the stack. The sampling probes are connected by insulated and heat traced transport lines to the 296-B-10 monitoring cabinet (Figures 1 and 2) which is north of the stack and houses the flow monitoring and radiation analysis equipment. Instrument controls, alarms and indicators are located within this structure, except for the high airborne radiation beacon and system failure bell, which are mounted on the exterior of the cabinet. Remote alarms and indicators are connected to the K-3 panel and the control panel in 225.

The stack sampling and monitoring probe assembly consists of 5 nozzles for the sampling probe and 2 nozzles to monitor the flow. The flowrate output is recorded at the G-2 panel in WESF. The sampling and monitoring probes were designed for multinozzle isokinetic sampling. Drawings H-2-91142 and H-2-92507 show the probe assembly as it was installed in 1983.

The record sampling system operates continuously while air is being exhausted from the stack. The system has a switched receptacle linked to exhaust fan operation. A flow switch disrupts power to the receptacle when stack air flow drops and restores power upon detection of resumed flow. The record sampler extracts its air sample at a rate of 0.94 liter/s (2 cfm). This rate can be manually adjusted by the flow control valve for the record sampling system. Air flow rates through the record filter are sensed, regulated, indicated and totalized in the monitoring cabinet. A low sample air flow rate activates an alarm

switch that initiates local and remote alarm indicators. Details on the record sampler components are shown in Table 1.

The sample flow rate through the continuous air monitor (CAM) is 0.94 liter/s (2 cfm). The CAM flow rate can be manually adjusted at its flow control valve. The air flow through CAM is regulated and equipped with a flow rate indicator. Local alarms are provided by the sample system for low sample flow rate. Alarms resulting from radiation analyzer malfunction or low sample flow rate are combined into one general alarm at the K-3 panel and the control panel in 225 B. The sample system has local alarms for high airborne radiation and system failure and a high temperature alarm for CAM circuit protection. Details on components of the beta/gamma radiation monitor are shown in Table 2. Photographs of the system are provided in Appendix B.

C. Regulations

As a result of the Clean Air Act Amendments of 1990, the Environmental Protection Agency (EPA) promulgated new regulations known as National Emission Standards for Hazardous Air Pollutants (NESHAP). Of particular concern to facilities on the Hanford site is Title 40, Code of Federal Regulations, Chapter 40, Part 61, Subpart H (40 CFR 61, Subpart H), "National Emission Standards for Emissions of Radionuclides Other Than Radon From Department of Energy Facilities". An effort is being made to bring each of the facilities on site into compliance with the applicable portions of 40 CFR 61, Subpart H.

Assessments of facility stacks and potential radionuclide emissions determined whether these stacks would be subject to the sampling and monitoring requirements of 40 CFR 61, Subpart H. The results of these assessments were forwarded to EPA in December 1993. Based on the assessment, Stack 296-B-10 is a minor stack. Therefore, 296-B-10 is not required to be in compliance with the sampling and monitoring requirements of 40 CFR 61, Subpart H. However, the sampling and monitoring system must be in compliance with the Environmental Compliance Manual, WHC-CM-7-5.

WHC-CM-7-5 requirement for sampling and monitoring of a minor registered stack is periodic confirmatory measurements. Currently, 296-B-10 is sampled continuously with a record sampler and continuous air monitor (CAM).

D. Procedures

The following is a list of procedures associated with the operation and maintenance of Stack 296-B-10.

Table 1. Calibration Procedures for 296-B-10 System

Procedure Number	Title
BO-001-019	Perform Emergency Responses to Alarms in Exhaust Stacks
PSCP-3-002	Continuous Air Monitor
PSCP-7-001	Sample Flow Indicator
PSCP-4-007	Flow Totalizer
PSCP-4-091	Pressure Indicator
PSCP-6-029	Flow Alarm Switch
PSCP-6-085	Flow Transmitter

E. Drawing List

DRAWINGS* FOR STACK 296-B-10

DRAWING NUMBER	TITLE	TYPE
H-2-66531	HVAC Air Flow Diagram	Essential
H-2-66681	Instrument Engineering Diagram Building Exhaust System K1	Essential
H-2-66682	Instrument Engineering Cell Exhaust System K3	Essential
H-2-37411	K3 Emergency Ejector System Piping and Details	Support
H-2-92501	Generic Stack Beta Record Cabinet Assembly	General
H-2-92507	Stack Monitor Installation 296-B-10	Support
H-2-91142	Probe Assembly 296-B-10 Stack Monitor	Support
H-2-96552	IEFD B Plant Area Stack Monitor 296-B-10	Essential

* This list is not intended to be inclusive.

IV. System Status

A. Alarm Assessment

The alarm assessment was used to ensure that current alarms provide adequate protection for plant personnel, equipment, and the environment. It was determine that alarms associated with the monitoring and sampling system for Stack 295-B-10 are unnecessary. Please see Attachment 1.

B. Component Based Recall System (CBRS)

The calibration of the 296-B-10 stack sampling and monitoring instrumentation is tracked using the Component Based Recall System (CBRS) at B Plant. Currently, all stack monitoring instrumentation is on a six month calibration cycle. The calibration procedures being used are shown in Section III, Part D, Table 1. The calibrations are performed by B Plant Instrument Maintenance.

C. Job Control System (JCS) Open Work Packages

There are nine open work packages. The open work packages are associated with the calibration of the monitoring system. Calibrations will be completed by the end of April 1995.

V. Items Requiring Action

Items requiring action are activities that will enhance the performance of the system.

A. Near Term Items

Increase the sampling duration from a one week interval to a two week interval.

B. Long Term Items

Ensure the monitoring and sampling system is in compliance with all regulations.

VI. Trends

Stack flow rate is in the range of 8,500-9,500 liters/s (18,000-20,000 cfm) during normal operations. The flow rate and emissions are measured continuously.

The record sample filter paper is exchanged on routine basis and analyzed for total alpha and total beta (Figure 3). The administrative control values (ACV) for total alpha and total beta are 2E-14 and 9E-12,

respectively. A composite sample analyzing for ^{90}Sr and ^{137}Cs is done quarterly. The CAM sample is counted for total alpha and total beta by the Health Physics Organization at B Plant. The Health Physics Organization records the output from the CAM each shift.

Vent and Balance performs a quarterly flow test and a annual efficiency test on the filters.

Below is a table of the routine surveillances performed on the 296-B-10 system.

Table 3. Routine Surveillance of 296-B-10 System

Surveillance	Frequency	Responsibility
Check of local CAM ratemeter	Each shift	Health Physics
Change of CAM filter	Routinely	Health Physics
Change and analysis of record sample filter (Figure 3)	Routinely	Health Physics/ WSCF
Record sample composite analysis	Quarterly	WSCF
Stack flow measurement	Quarterly	Vent and Balance
Efficiency test of HEPA Filter System	Annually	Vent and Balance

VII. System Aging, Spare Parts Consideration, and Long Term Maintenance Plan

All components are reliable for at least five years except the vacuum pumps and timers. Spare parts are available. The long term maintenance plan is to keep the system functional, accurate, cost effective and in compliance with the regulations.

VIII. Checkoff List

The checkoff list is a general overview of the performance of the system.

A. Accessible parts of the entire system or component have been thoroughly walked down at least once in the past 30 days to review current performance, equipment status and condition.

Yes_X_ No____

Comments (exceptions):

B. Are there any conditions which might require limitations different from operating limits as defined in the SDDs and SARs?

Yes____ No_X__

Comments (exceptions):

C. Are there trip settings, set points, interlocks, etc., that should be changed from those currently established?

Yes____ No_X__

Comments (exceptions):

D. Are there interface areas which have not performed acceptably, which require resolution?

Yes____ No_X__

Comments (exceptions):

E. Are there temporary plant or procedural conditions which will and should remain in place?

Yes____ No_X__

Comments (exceptions):

F. Is any retesting or special testing required?

Yes_X__ No___

Comments (exceptions): Testing the two week sample period is required.

G. Are the current plant corrective maintenance, preventive maintenance, and calibration database items all properly identified and are planned actions acceptable?

Yes_X__ No____

Comments (exceptions):

H. Are all other action items (NCRs, IRs, etc.) properly identified and assigned?

Yes_X__ No____

Comments (exceptions):

I. Are there any special operating considerations?

Yes____ No_X__

Comments (exceptions):

J. Are near term spare parts adequate?

Yes_X__ No____

Comments (exceptions):

K. Have any safety issues (radiological, industrial, environmental) been identified that remain unresolved?

Yes____ No_X__

Comments (exceptions):

L. Have all component data been entered into the plant information database?.

Yes_X__ No____

Comments (exceptions):

M. Have applicable inspections been conducted?

Yes_X__ No____

Comments (exceptions):

N. Has cleanliness evaluation been completed?

Yes_X__ No____

Comments (exceptions):

O. Are any issues still unresolved?

Yes____ No_X__

Comments (exceptions):

REFERNCES

American National Standards Institute, Inc., *Guide to Sampling Airborne Radioactive Materials in Nuclear Facilities*, ANSI N13.1, 1969, New York, New York.

Environmental Compliance Manual, WHC-CM-7-5, Westinghouse Hanford Company, Richland, Washington.

Environmental Protection Agency, *National Emissions Standards for Emissions of Radionuclides Other Than Radon From Department of Energy Facilities*, Title 40 Code of Federal Regulations, Chapter 61, Subpart H, 1989, Washington, D.C.

Lesser, J. E., *Facility Effluent Monitoring Plan for the B Plant*, WHC-EP-0467, September 1994, Westinghouse Hanford Company,Richland, Washington.

Sewell, R. G., *B Plant Safety Analysis Report*, SD-WM-SAR-013, July 1985, Rockwell Hanford Operations, Richland, Washington.

APPENDIX A. PHOTOGRAPHS OF 296-B-10

Figure 1: Stack 296-B-10 Cabinet

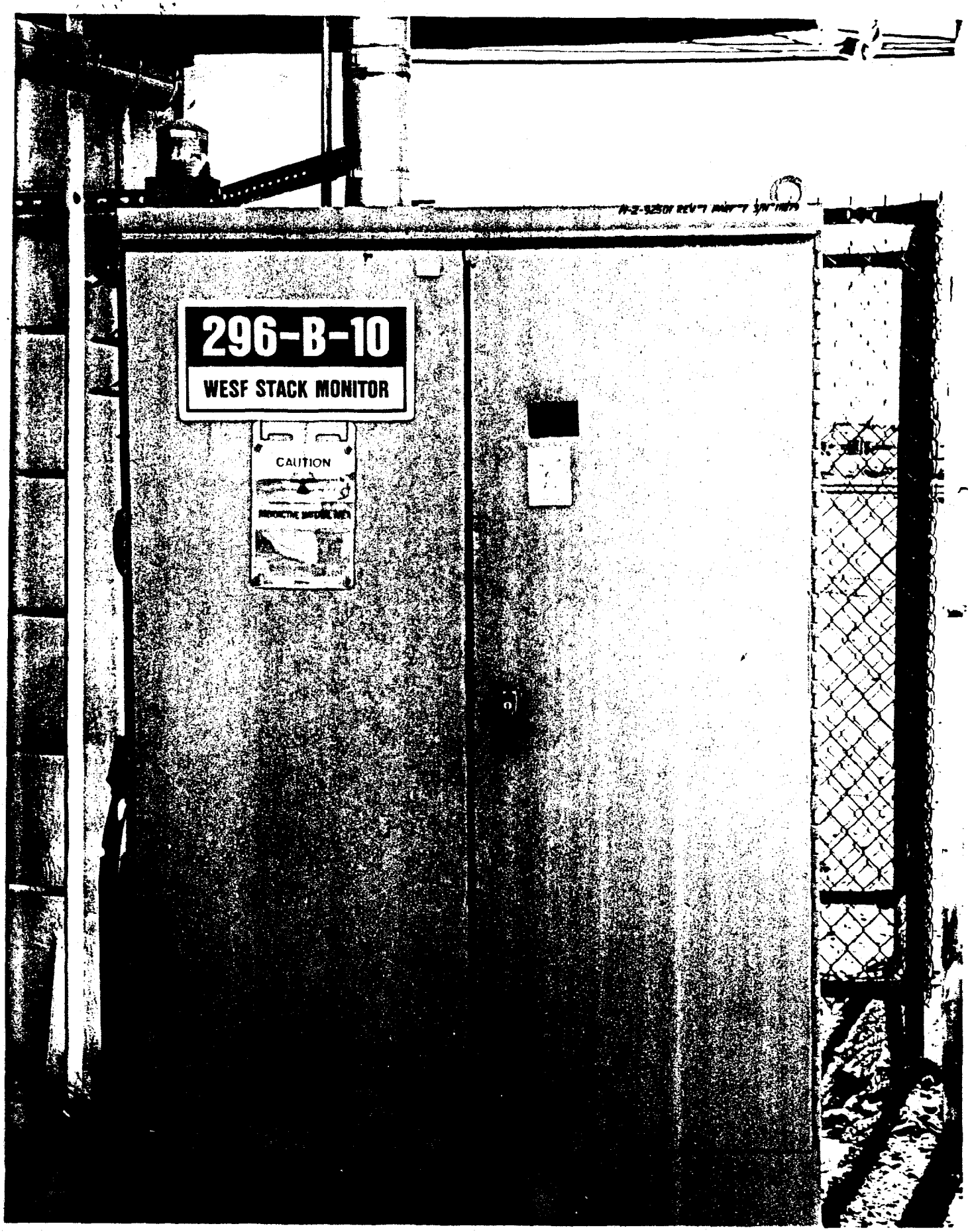


Figure 2: Stack 296-B-10 Monitoring System

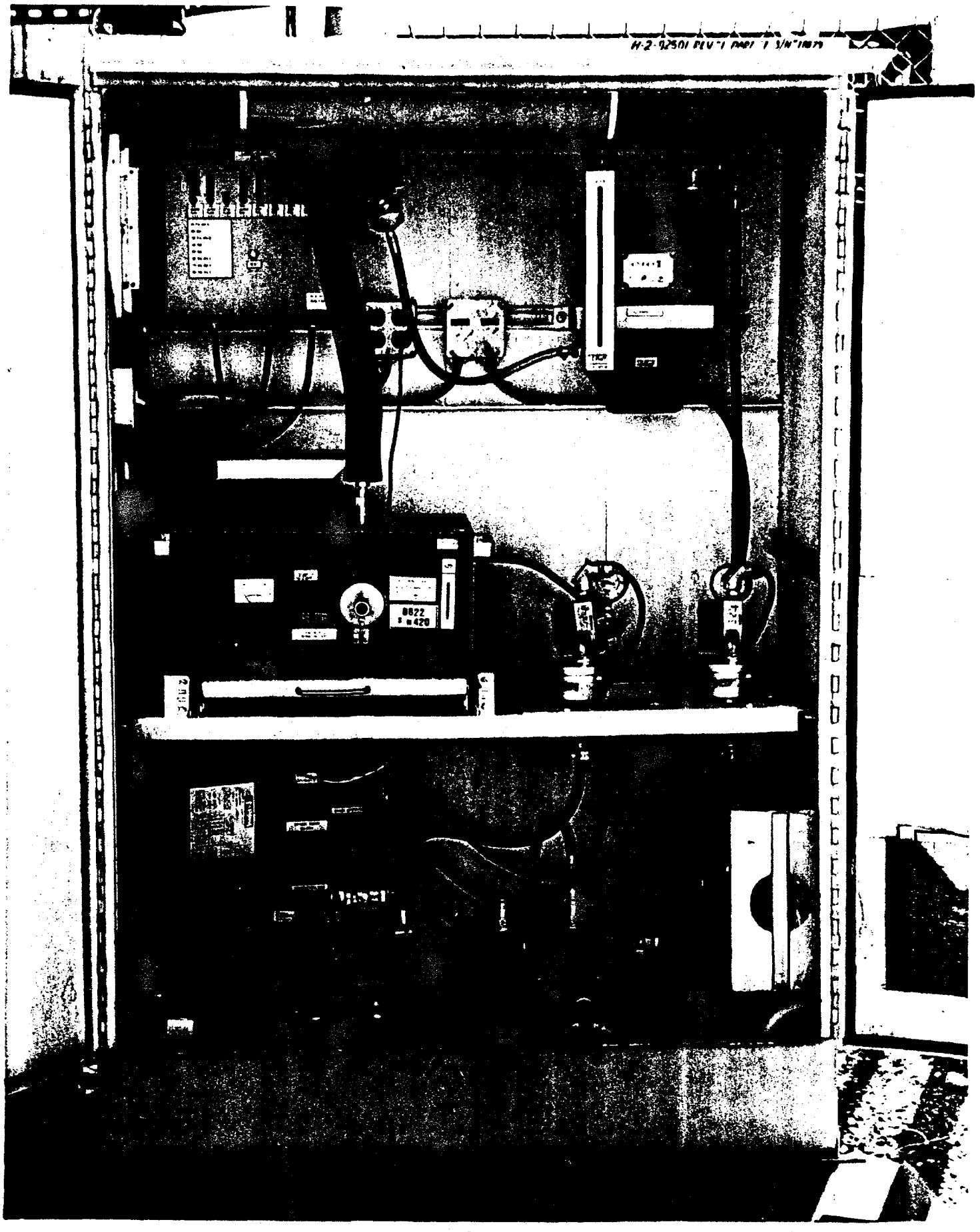
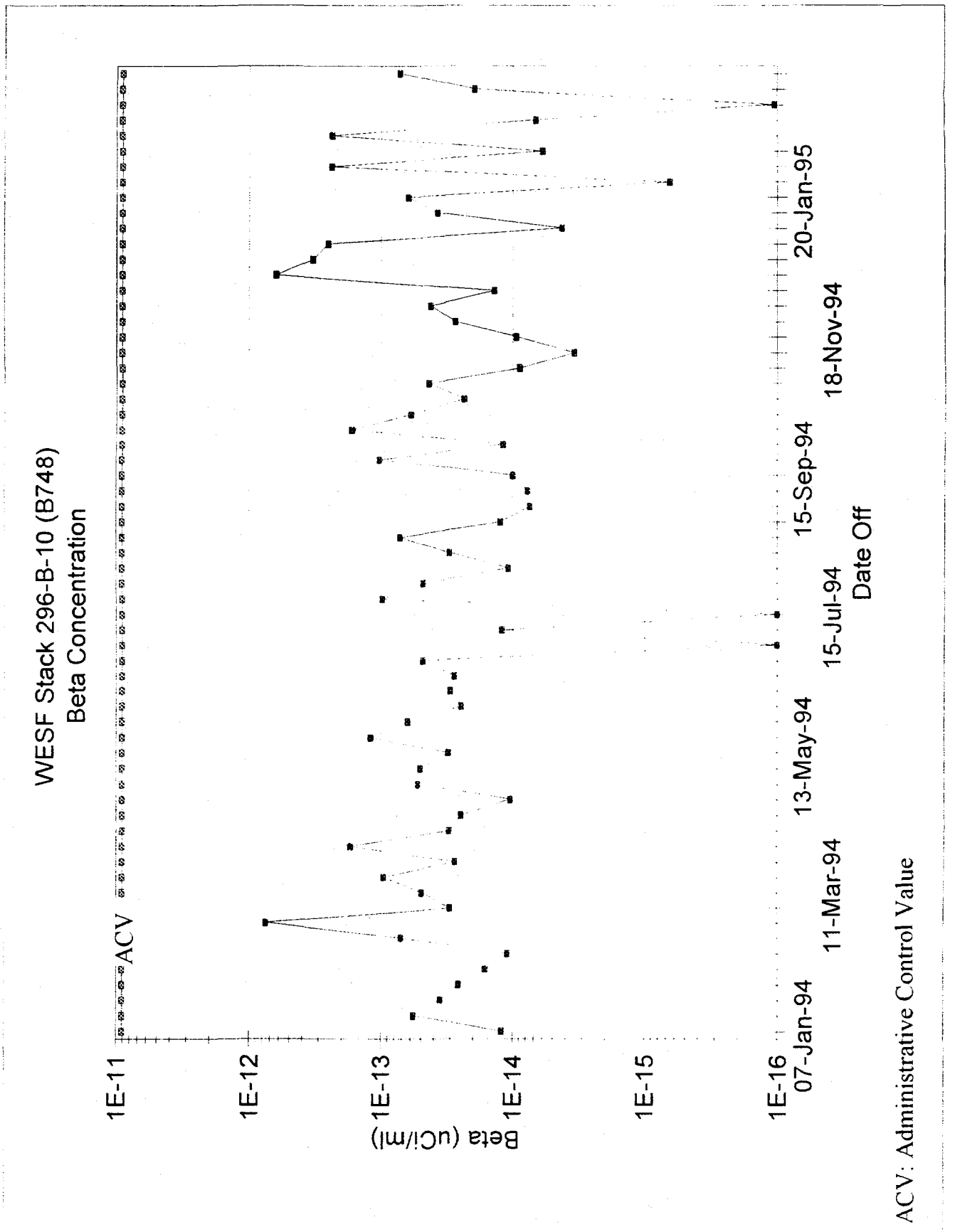


Figure 3: Beta Concentration Graph



SYSTEM ALARM MATRIX - STACK 296-B-10

System Number: C97A
Cognizant Engineer: Tina M. Ridge
Date: April 17, 1995

Alarm Objective: To provide adequate protection for plant personnel, equipment, and the environment.

1. Are the proper alarms and set points established?

   Yes X No____

   Comments (exceptions): Current alarm set point (ASP) is well below the maximum alarm set point. The ASP of 1,000 cpm does not cause nuisance or false alarms. The lower ASP allows for early detection of problems.

   A. Are there any alarms which should be made active or inactive?

      Yes___ No X

      Comments (exceptions):

2. Perform a walkdown of your system, look at the following three items:

   A. Are there any overdue calibration stickers on alarm loop instruments?

      Yes____ No X

      Comments (exceptions):

   B. Are the alarms adequate to attract attention to alarmed points (alarms on the FPMCS are considered adequate)?

      Yes X No____

      Comments (exceptions):

   C. Are alarms properly labeled? (i.e. OSR, Inactive, Tags legible)

      Yes X No____

      Comments (exceptions):

3. Questions that are to be answered by Operations personnel:

   Operator: L. L. Lanman Date: April 17, 1995

   A. Ask if they feel there are any alarms which are unnecessary or are continually alarming causing a nuisance? (if so evaluate this alarm using WHC-CM-5-6 section 5.27)

      Yes____ No_X__

      Comments (exceptions):

   B. Ask operations if they feel there are any areas which need to be alarmed and are not at this time?

      Yes____ No_X__

      Comments (exceptions):

4. Is there any evidence of tampering with alarms or annunciation equipment or instruments that might be intended to defeat or silence an alarm without proper authorization?

   Yes____ No_X__

   Comments (exceptions):

5. Are there any overdue CBRS cards on any system alarm?

   Yes____ No_X__

   Comments (exceptions):

6. Are there any backlog work packages on the system alarms?

   Yes____ No_X__

   Comments (exceptions):

7. Are there any open FAITS items for system alarm?

   Yes____ No_X__

   Comments (exceptions):

8. Are there any alarm responses not covered in a plant operating procedure?

   Yes____ No_X__

   Comments (exceptions):

9. Are there any other issues or alarm status deficiencies that are not described above that would affect process equipment or safety?

Yes____ No_X__

Comments (exceptions):

Component Status Report

Date Reported:	April 11, 1995
System:	C97A - Stack 296-B-10 Stack Monitoring System
Component:	**Record Sampler** **Filter Paper Holder**
Cognizant Engineer(s):	R. D. Weissenfels (December 1992 - September 1994) T. M. Ridge (September 1994 - Present)
Cognizant Manager:	D. L. Halgren (October 1992 - November 1994) D. W. Wilson (November 1994 - Present)

I. Summary of Component Status

The record sampler is located in the 296-B-10 Stack Monitoring Cabinet and manufactured by BGI Incorporated and requires a 47 mm filter paper (Gelman Sciences). The record sampler is used to sample the exhaust from Stack 296-B-10.

II. Trends

Radiological Control Technicians (RCT) perform a monthly overall inspection, and change the filter paper every two weeks. The purpose of the inspection is to ensure the equipment is functional and that there are not obvious problems with the equipment. RCTs are to document and report any defects with the monitoring system. After the filter paper is removed it is taken to WSCF Lab for analysis. WSCF Lab counts the filter paper for total alpha and total beta. This data is then placed in the Automated Bar Coding of Air Samples at Hanford (ABCASH) database. See Figure 3.

III. Component Aging and Spare Parts

The record sampler has been in place since 1984. It is anticipated that the record sampler will be functional for the lifetime of the current sampling system. Spares are available.

IV. Conclusions

The current monitoring system is in good condition and the only reason to modify the system would be if the regulations were to change.

V. Action Items

Near-term Items

Sustain the current condition of the monitoring and sampling system.

Long-term Items

Ensure the current monitoring and sampling system is in compliance with all regulations.

VI. Checkoff List

A. Are the current plant corrective maintenance, preventive maintenance, and calibration database items all properly identified, and are planned action acceptable?

Yes X No____

Comments (exceptions):

B. Are all other action items (IR, NCR, etc.) properly identified and assigned?

Yes X No____

Comments (exceptions):

C. Are near-term spare parts adequate?

Yes X No____

Comments (exceptions):

D. Are trend analysis data acceptable for continued operation?

Yes X No____

Comments (exceptions):

Component Status Report

Dated Reported:	April 11, 1995
System:	C97A - Stack 296-B-10 Stack Monitoring System
Component:	**Record Sampler** **Flow Totalizer**
Cognizant Engineer(s):	R. D. Weissenfels (December 1992 - September 1994) T. M. Ridge (September 1994 - Present)
Cognizant Manager:	D. L. Halgren (October 1992 - November 1994) D. W. Wilson (November 1994 - Present)

I. Summary of Component Status

The flow totalizer is located in the 296-B-10 Stack Monitoring Cabinet and manufactured by Rockwell (model MR-9). The flow totalizer is rated at 8.92 m^3/hr at 34.5 kPa (5 psi) and compensation for temperature occurs at 15.6 °C (60 °F). The flow totalizer records the flow continuously for the primary record sampler associated with Stack 296-B-10.

II. Trends

Radiological Control Technicians (RCT) perform a monthly overall inspection looking for obvious problems with the monitoring system. RCTs are to document and report any defects.

Instrument technicians calibrate the flow totalizer every 12 months.

III. Component Aging and Spare Parts

Estimated life of a flow totalizer is 5 years. Spares for the flow totalizer are considered adequate.

IV. Conclusions

The current monitoring system is in good condition and the only reason to modify the system would be if the regulations were to change.

V. Action Items

Near-term Items

Sustain the current condition of the monitoring and sampling system.

Long-term Items

Ensure the current monitoring and sampling system is in compliance with all regulations.

VI. Checkoff List

A. Are the current plant corrective maintenance, preventive maintenance, and calibration database items all properly identified, and are planned action acceptable?

Yes_X__ No____

Comments (exceptions):

B. Are all other action items (IR, NCR, etc.) properly identified and assigned?

Yes_X__ No____

Comments (exceptions):

C. Are near-term spare parts adequate?

Yes_X__ No____

Comments (exceptions):

D. Are trend analysis data acceptable for continued operation?

Yes_X__ No____

Comments (exceptions):

Component Status Report

Dated Reported:	April 11, 1995
System:	C97A - Stack 296-B-10 Stack Monitoring System
Component:	**Record Sampler Flowmeter**
Cognizant Engineer(s):	R. D. Weissenfels (December 1992 - September 1994) T. M. Ridge (September 1994 - Present)
Cognizant Manager:	D. L. Halgren (October 1992 - November 1994) D. W. Wilson (November 1994 - Present)

I. Summary of Component Status

The flowmeter is located in the 296-B-10 Stack Monitoring Cabinet and manufactured by Dwyer (model RMC). The flowmeter is rated at 241 kPa (35 psi) and 54.4 °C (130 °F). Accuracy of the flowmeter is 2% of full scale. Flowrate through the flowmeter is maintained at .94 liter/s (2 cfm).

II. Trends

Radiological Control Technicians (RCT) perform a monthly overall inspection looking for obvious problems with monitoring system. RCTs are to document and report any defects with the monitoring system.

Instrument technicians calibrate the flowmeter every 12 months.

III. Component Aging and Spare Parts

The reliability of the flowmeter is considered good with a lifetime expectancy of 5 years plus. Spares are available.

IV. Conclusions

The current monitoring system is in good condition and the only reason to modify the system would be if the regulations were to change.

V. Action Items

Near-term Items

Sustain the current condition of the monitoring and sampling system.

Long-term Items

Ensure the current monitoring and sampling system is in compliance will all regulations.

VI. Checkoff List

A. Are the current plant corrective maintenance, preventive maintenance, and calibration database items all properly identified, and are planned action acceptable?

Yes X No____

Comments (exceptions):

B. Are all other action items (IR, NCR, etc.) properly identified and assigned?

Yes X No____

Comments (exceptions):

C. Are near-term spare parts adequate?

Yes X No____

Comments (exceptions):

D. Are trend analysis data acceptable for continued operation?

Yes X No____

Comments (exceptions):

Component Status Report

Dated Reported:	April 11, 1995
System:	C97A - Stack 296-B-10 Stack Monitoring System
Component:	**Record Sampler** **Flow Switch**
Cognizant Engineer(s):	R. D. Weissenfels (December 1992 - September 1994) T. M. Ridge (September 1994 - Present)
Cognizant Manager:	D. L. Halgren (October 1992 - November 1994) D. W. Wilson (November 1994 - Present)

I. Summary of Component Status

The flow switch is located in 296-B-10 Stack Monitoring Cabinet and manufactured by Chem-Tech (Model 500-316-BP). At 103 kPa (15 psi) the flowrate can be between 9.44E-2 liter/s (0.2 scf/min) and 21.2 liter/s (35 scf/min) and 21.2 liters/s (45 cfm) at 414 k Pa (60 psi).

II. Trends

Radiological Control Technicians (RCT) perform a monthly alarm test. When the sample flow is eliminated the system alarms at the alarm panel board, beacon alarm is activated (on the exterior of the 296-B-10 Stack Monitoring Cabinet) and an alarm is activated at the dispatch office. RCTs are to confirm that the alarm on the panel board and the beacon alarm are functioning properly. RCTs are to report any failed alarms.

Instrument technicians check the flow switch once every 12 months by lowering the flow through the flowmeter below 0.71 liter/s (1.5 cfm). The instrument technicians ensure that the low flow alarm on the panel board, beacon alarm, and the dispatch alarm were activated when the flow was decreased.

III. Component Aging and Spare Parts

The reliability of the flow switch is considered good with a lifetime expectancy of 5 years plus. Spares are available.

IV. Conclusions

The current monitoring system is in good condition. The only reason to modify the system would be if the regulations were to change drastically.

V. Action Items

Near-term Items

Sustain the current condition of the monitoring and sampling system.

Long-term Items

Ensure the current monitoring and sampling system is in compliance with all regulations.

VI. Checkoff List

A. Are the current plant corrective maintenance, preventive maintenance, and calibration database items all properly identified, and are planned action acceptable?

Yes X No____

Comments (exceptions):

B. Are all other action items (IR, NCR, etc.) properly identified and assigned?

Yes X No____

Comments (exceptions):

C. Are near-term spare parts adequate?

Yes X No____

Comments (exceptions):

D. Are trend analysis data acceptable for continued operation?

Yes X No____

Comments (exceptions):

Component Status Report

Dated Reported:	April 11, 1995
System:	C97A - Stack 296-B-10 Stack Monitoring System
Component:	**Record Sampler** **Flow Control Valve**
Cognizant Engineer(s):	R. D. Weissenfels (December 1992 - September 1994) T. M. Ridge (September 1994 - Present)
Cognizant Manager:	D. L. Halgren (October 1992 - November 1994) D. W. Wilson (November 1994 - Present)

I. Summary of Component Status

The flow control valve is located in the 296-B-10 Stack Monitoring Cabinet and manufactured by Eberline (model 10552-C02-RAP-IR). Vendor information did not provide information on operating ranges or specifications.

II. Trends

Radiological Control Technicians (RCT) perform a monthly overall inspection looking for obvious problems with monitoring system. RCTs are to document and report any defects with the monitoring system.

Instrument technicians perform a annual functional test on the flow control valve. This test is accomplished by adjusting the flow until the low flow alarm is activated.

III. Component Aging and Spare Parts

The reliability of the flow control valve is considered good with a lifetime expectancy of 5 years plus. Spares are available.

IV. Conclusions

The current monitoring system is in good condition. The only reason to modify the system would be if the regulations were to change drastically.

V. Action Items

Near-term Items

Sustain the current condition of the monitoring and sampling system.

Long-term Items

Ensure the current monitoring and sampling system is in compliance with all regulations.

VI. Checkoff List

A. Are the current plant corrective maintenance, preventive maintenance, and calibration database items all properly identified, and are planned action acceptable?

Yes_X_ No____

Comments (exceptions):

B. Are all other action items (IR, NCR, etc.) properly identified and assigned?

Yes_X_ No____

Comments (exceptions):

C. Are near-term spare parts adequate?

Yes_X_ No____

Comments (exceptions):

D. Are trend analysis data acceptable for continued operation?

Yes_X_ No____

Comments (exceptions):

Component Status Report

Dated Reported:	April 11, 1995
System:	C97A - Stack 296-B-10 Stack Monitoring System
Component:	**Record Sampler** **Timer**
Cognizant Engineer(s):	R. D. Weissenfels (December 1992 - September 1994) T. M. Ridge (September 1994 - Present)
Cognizant Manager:	D. L. Halgren (October 1992 - November 1994) D. W. Wilson (November 1994 - Present)

I. Summary of Component Status

The timer is located in the 296-B-10 Stack Monitoring Cabinet and manufactured by Cramer (model 10083). The timer has an accuracy of ±1% and readable to tenths of an hour.

II. Trends

Instrument technicians perform a monthly functional check on the timer.

III. Component Aging and Spare Parts

A timer will last from 6 months up to 1 year. Spare are available.

IV. Conclusions

The current monitoring system is in good condition. The only reason to modify the system would be if the regulations were to change drastically.

V. Action Items

Near-term Items

Sustain the current condition of the monitoring and sampling system.

Long-term Items

Ensure the current monitoring and sampling system is in compliance with all regulations.

VI. Checkoff List

A. Are the current plant corrective maintenance, preventive maintenance, and calibration database items all properly identified, and are planned action acceptable?

Yes_X__ No____

Comments (exceptions):

B. Are all other action items (IR, NCR, etc.) properly identified and assigned?

Yes_X__ No____

Comments (exceptions):

C. Are near-term spare parts adequate?

Yes_X__ No____

Comments (exceptions):

D. Are trend analysis data acceptable for continued operation?

Yes_X__ No____

Comments (exceptions):

Component Status Report

Dated Reported:	April 11, 1995
System:	C97A - Stack 296-B-10 Stack Monitoring System
Component:	**Record Sampler** **Vacuum Pump**
Cognizant Engineer(s):	R. D. Weissenfels (December 1992 - September 1994) T. M. Ridge (September 1994 - Present)
Cognizant Manager:	D. L. Halgren (October 1992 - November 1994) D. W. Wilson (November 1994 - Present)

I. Summary of Component Status

The vacuum pump is located in the 296-B-10 Stack Monitoring Cabinet and manufactured by GAST (model 0823). The vacuum pump is rated at 373 Watts (1/2 hp), capacity of 3.4 liters/s (7.2 cfm) at 0 kPa (0" Hg), and 1,725 rpm.

II. Trends

Pumps are replaced on an annual basis.

III. Component Aging and Spare Parts

Pumps used on the 296-B-10 system are replaced yearly. Spare pumps are available.

IV. Conclusions

The current monitoring system is in good condition. The only reason to modify the system would be if the regulations were to change drastically.

V. Action Items

Near-term Items

Sustain the current condition of the monitoring and sampling system.

Long-term Items

Ensure the current monitoring and sampling system is in compliance with all regulations.

VI. Checkoff List

A. Are the current plant corrective maintenance, preventive maintenance, and calibration database items all properly identified, and are planned action acceptable?

Yes_X_ No____

Comments (exceptions):

B. Are all other action items (IR, NCR, etc.) properly identified and assigned?

Yes_X_ No____

Comments (exceptions):

C. Are near-term spare parts adequate?

Yes_X_ No____

Comments (exceptions):

D. Are trend analysis data acceptable for continued operation?

Yes_X_ No____

Comments (exceptions):

Component Status Report

Dated Reported:	April 11, 1995
System:	C97A - Stack 296-B-10 Stack Monitoring System
Component:	**Beta/Gamma Radiation Monitor Continuous Air Monitor (CAM)**
Cognizant Engineer(s):	R. D. Weissenfels (December 1992 - September 1994) T. M. Ridge (September 1994 - Present)
Cognizant Manager:	D. L. Halgren (October 1992 - November 1994) D. W. Wilson (November 1994 - Present)

I. Summary of Component Status

The Continuous Air Monitor (CAM) is located in 296-B-10 Stack Monitoring Cabinet and manufactured by Eberline (model AMS-3 Beta Gamma). The pancake G-M tube detector is 4.4 centimeter diameter (1-3/4" diameter) with 1.4 to 2.0 mg/cm^2 mica window with a log scale range of 10-100K cpm range. Air flow is maintained at .94 liter/s (2 cfm).

II. Trends

Radiological Control Technicians (RCT) perform a monthly overall inspection, and change the filter paper. The purpose of the inspection is to ensure the equipment is functional and that there are not obvious problems with the equipment. After the filter paper is removed it is maintained by B Plant's Health Physics Organization until the record sample has been validated. The sample is discarded when the validation is complete.

Instrument technicians perform a monthly source check on the CAM. The technicians compare the level on the CAM to the level on at the dispatch office. Both numbers a recorded and reviewed by the cognizant engineer.

III. Component Aging and Spare Parts

The CAM can fail for a variety of reason varying in degrees of seriousness. A CAM can be use for many years before it needs to be replaced. Spares are available.

IV. Conclusions

The current monitoring system is in good condition. The only reason to upgrade the system would be if the regulations were to change drastically.

V. Action Items

Near-term Items

Sustain the current condition of the monitoring and sampling system.

Long-term Items

Remove the CAM and ensure the monitoring and sampling system is in compliance with all regulations.

VI. Checkoff List

A. Are the current plant corrective maintenance, preventive maintenance, and calibration database items all properly identified, and are planned action acceptable?

Yes X No____

Comments (exceptions):

B. Are all other action items (IR, NCR, etc.) properly identified and assigned?

Yes X No____

Comments (exceptions):

C. Are near-term spare parts adequate?

Yes X No____

Comments (exceptions):

D. Are trend analysis data acceptable for continued operation?

Yes X No____

Comments (exceptions):

Component Status Report

Dated Reported:	April 11, 1995
System:	C97A - Stack 296-B-10 Stack Monitoring System
Component:	**Beta/Gamma Radiation Monitor** **Flow Switch**
Cognizant Engineer(s):	R. D. Weissenfels (December 1992 - September 1994) T. M. Ridge (September 1994 - Present)
Cognizant Manager:	D. L. Halgren (October 1992 - November 1994) D. W. Wilson (November 1994 - Present)

I. Summary of Component Status

The flow switch is located in 296-B-10 Stack Monitoring Cabinet and manufactured by Chem-Tech (Model 500-316-BP). At 103 kPa (15 psi) the flowrate can be between 9.44E-2 liter/s (0.2 scf/min) and 16.5 liters/s (35 scf/min) and 21.2 liters/s (45 cfm) at 414 kPa (60 psi).

II. Trends

Radiological Control Technicians (RCT) perform a monthly alarm test. When the sample flow is eliminated the system alarms at the alarm panel board, beacon alarm is activated (on the exterior of the 296-B-10 Stack Monitoring Cabinet) and an alarm is activated at the dispatch office. RCTs are to confirm that the alarm on the panel board and the beacon alarm are functioning properly. However, the RCTs are not required to ensure that the alarm was activated at the dispatch office. RCTs are to report any failed alarms.

Instrument technicians check the flow switch once every 12 months by lowering the flow through the flowmeter below .71 liter/s (1.5 cfm). The instrument technicians ensure that the low flow alarm on the panel board, beacon alarm, and the dispatch alarm were activated when the flow was decreased.

III. Component Aging and Spare Parts

The reliability of the flow switch is considered good with a lifetime expectancy of 5 years plus. Spares are available.

IV. Conclusions

The current monitoring system is in good condition. The only reason to upgrade the system would be if the regulations were to change drastically.

V. Action Items

Near-term Items

Sustain the current condition of the monitoring and sampling system.

Long-term Items

Remove the flow switch and ensure the monitoring and sampling system is in compliance with all regulations.

VI. Checkoff List

A. Are the current plant corrective maintenance, preventive maintenance, and calibration database items all properly identified, and are planned action acceptable?

Yes____ No____

Comments (exceptions):

B. Are all other action items (IR, NCR, etc.) properly identified and assigned?

Yes_X__ No____

Comments (exceptions):

C. Are near-term spare parts adequate?

Yes_X__ No____

Comments (exceptions):

D. Are trend analysis data acceptable for continued operation?

Yes_X__ No____

Comments (exceptions):

Component Status Report

Dated Reported:	April 11, 1995
System:	C97A - Stack 296-B-10 Stack Monitoring System
Component:	**Beta/Gamma Radiation Monitor** **Flow Control Valve**
Cognizant Engineer(s):	R. D. Weissenfels (December 1992 - September 1994) T. M. Ridge (September 1994 - Present)
Cognizant Manager:	D. L. Halgren (October 1992 - November 1994) D. W. Wilson (November 1994 - Present)

I. Summary of Component Status

The flow control valve is located in the 296-B-10 Stack Monitoring Cabinet and manufactured by Eberline (model 10552-C02-RAP-IR). Vendor information did not provide information on operating ranges or specifications.

II. Trends

Radiological Control Technicians (RCT) perform a monthly overall inspection looking for obvious problems with monitoring system. RCTs are to document and report any defects with the monitoring system.

Instrument technicians perform a annual functional test on the flow control valve. This test is accomplished by adjusting the flow until the low flow alarm is activated.

III. Component Aging and Spare Parts

The reliability of the flow control valve is considered good with a lifetime expectancy of 5 years plus. Spares are available.

IV. Conclusions

The current monitoring system is in good condition. The only reason to upgrade the system would be if the regulations were to change drastically.

V. Action Items

Near-term Items

Sustain the current condition of the monitoring and sampling system.

Long-term Items

Remove flow control valve and ensure the monitoring and sampling system is in compliance with all regulations.

VI. Checkoff List

A. Are the current plant corrective maintenance, preventive maintenance, and calibration database items all properly identified, and are planned action acceptable?

Yes_X_ No____

Comments (exceptions):

B. Are all other action items (IR, NCR, etc.) properly identified and assigned?

Yes_X_ No____

Comments (exceptions):

C. Are near-term spare parts adequate?

Yes_X_ No____

Comments (exceptions):

D. Are trend analysis data acceptable for continued operation?

Yes_X_ No____

Comments (exceptions):

Component Status Report

Dated Reported:	April 11, 1995
System:	C97A - Stack 296-B-10 Stack Monitoring System
Component:	**Beta/Gamma Radiation Monitor** **Vacuum Pump**
Cognizant Engineer(s):	R. D. Weissenfels (December 1992 - September 1994) T. M. Ridge (September 1994 - Present)
Cognizant Manager:	D. L. Halgren (October 1992 - November 1994) D. W. Wilson (November 1994 - Present)

I. Summary of Component Status

The vacuum pump is located in the 296-B-10 Stack Monitoring Cabinet and manufactured by GAST (model 0823). The vacuum pump is rated at 373 Watt (1/2 hp), capacity of 3.4 liters/s (7.2 cfm) at 0 kPa (0" Hg), and 1,725 rpm.

II. Trends

Pumps are replaced on an annual basis.

III. Component Aging and Spare Parts

Pumps used on the 296-B-10 system are replaced each year.

IV. Conclusions

The current monitoring system is in good condition. The only reason to upgrade the system would be if the regulations were to change drastically.

V. Action Items

Near-term Items

Sustain the current condition of the monitoring and sampling system.

Long-term Items

Remove the vacuum pump and ensure the monitoring and sampling system is in compliance with all regulations.

VI. Checkoff List

A. Are the current plant corrective maintenance, preventive maintenance, and calibration database items all properly identified, and are planned action acceptable?

Yes X No____

Comments (exceptions):

B. Are all other action items (IR, NCR, etc.) properly identified and assigned?

Yes X No____

Comments (exceptions):

C. Are near-term spare parts adequate?

Yes X No____

Comments (exceptions):

D. Are trend analysis data acceptable for continued operation?

Yes X No____

Comments (exceptions):