ACTION SHEET 25

between

The Power Reactor and Nuclear Fuel Development Corporation of Japan (PNC)
and
The United States Department of Energy (DOE)
for

PFPF Remote Monitoring and Software Upgrades

1. Introduction

Under Article II (Area of Cooperation) of the Agreement between PNC and DOE for Cooperation in Research and Development Concerning Nuclear Material Control and Accounting Measures for Safeguards and Nonproliferation (herein called the "Agreement"), dated September 15, 1993, DOE and PNC undertake to carry out a cooperative effort on the joint development and implementation of an integrated network system, and remote transmission hardware and software upgrades for the Plutonium Fuel Production Facility (PFPF), and other software upgrades for existing safeguards systems.

2. Scope of Work

This action sheet provides for the integration of nondestructive assay systems in the feed storage area of PFPF with Material Accountancy Glove Box counters in the process area to determine the direction and amount of nuclear material transfers into and out of the feed storage area and the process area. Hardware and software will also be developed to allow remote transfer of both instrument health and status information and Nondestructive Assay (NDA) data. This action sheet also provides for the development and installation of upgraded software to allow for consolidation of software versions on over 25 other systems based on shift registers or GRANDs that are used for unattended monitoring and systems used in attended operation to measure scrap, waste and holdup at several PNC facilities.

The work performed under this Action Sheet shall be performed at the Los Alamos National Laboratory (LANL) and PNC facilities in accordance with the terms and conditions of the Agreement.

3. Program Management

LANL is responsible for developing software and supplying new hardware. Work to be done is identified in Appendix I and is limited to techniques for nuclear safeguards applications. PNC is responsible for providing design information, operating data, and other

information required for completion of the joint studies. Appendix II identifies key personnel working on this project.

DOE and LANL shall work directly with PNC in planning tasks and resolving programmatic and technical questions. LANL shall start by developing and circulating separate work plans with projected milestones for each task and update the work plans with PNC concurrence as work progresses.

LANL shall prepare brief quarterly letter progress reports on each task and circulate them to PNC, DOE, and to other pertinent organizations as requested by PNC.

LANL and PNC shall prepare and present written and oral reports at meetings of the Permanent Coordinating Group (PCG).

4. Fiscal Management

PNC shall make a cash contribution with the sum of $900,000. in United States dollars to conduct the activities related to the development of software and hardware for PNC facilities as defined in Appendix I of this Action Sheet in the following manner:

a.) A contribution of $100,000. in United States dollars shall be due and payable upon receipt of an invoice to be issued in JFY 1996 (Japanese Fiscal Year) after the date of signature of the Action Sheet.

b.) A contribution of $500,000. in United States dollars shall be due and payable upon receipt of an invoice to be issued in April 1997. This payment is subject to approval and the appropriation of necessary funding by the Japanese Government for Japanese Fiscal Year 1997 (JFY 1997).

c.) A contribution of $300,000. in United States dollars shall be due and payable upon receipt of an invoice to be issued in April 1998. This payment is subject to approval and the appropriation of necessary funding by the Japanese Government for Japanese Fiscal Year 1998 (JFY 1998).

All contributions by PNC shall be due and payable within thirty days of receipt by PNC of an invoice from DOE, subject to availability of appropriated funds to PNC.

DOE shall be responsible for the budget planning and financial management and shall make best efforts to complete the PNC-funded activities in the Appendix I satisfactorily and within the cash contribution by PNC. DOE costs are determined in accordance with DOE's policy for costing work it performs for others as set forth in 10 CFR Part 1009. The total cost to PNC for DOE's performance of work under this Action Sheet shall not, without PNC's prior consent, exceed the contributions set forth above.

DOE shall not begin or carry out work prior to entry into force of the Agreement and Action Sheet and receipt of the required payment in advance. Work shall not be continued after funds from PNC have been depleted.

Throughout the duration of work under this Action Sheet, PNC shall provide sufficient funds in advance to reimburse DOE for causing LANL to perform the work described in this Action Sheet, and DOE shall have no obligation to perform in the absence of adequate advance funds. Payment in advance from PNC shall be sufficient to cover the expected obligation and cash requirements of the work until a subsequent request for payment in advance can be made, collected, and recorded. In this regard, sufficient advance funds shall be provided to maintain, at a minimum, a continuous 90-days advance of funds for expected DOE fund requirements during the life of this Action Sheet. Advances shall be sufficient to cover expected termination costs that DOE would incur on behalf of PNC.

5. Duration and Termination

This Action Sheet shall enter into force upon the later date of signature and shall continue in force for a two year period or until mutually agreed by the parties that all activities under this Action Sheet are completed.

For the Power Reactor and Nuclear Fuel Development Corporation of Japan	For the United States Department of Energy
Signature: [signature]	Signature: [signature]
Printed Name: Masami Katsuragawa	Printed Name: Kenneth E. Sanders
Title: Director International Division	Title: Division Director
Date: March 4, 1997	Date: 14 February 1997

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APPENDIX I

PFPF Remote Monitoring and Software Upgrades

1. Study Outline

This program involves the joint development of an advanced integrated safeguards system with remote monitoring capability in the PFPF feed storage and process areas and upgrades and installation of other software for safeguards systems used in PNC facilities. In this study LANL will provide:

Integrated Measurement System with Remote Data Transmission

Phase I

1. Development of software and hardware upgrades for the Plutonium Canister Assay System #4 (PCAS #4) to add the capability to transfer instrument health and status data to a remote location within PFPF. This activity will provide for a local operating network, network hardware modules, and data transmission hardware to be installed on the PCAS #4 instrument. Software will be developed to allow remote data collection and archiving.

2. Installation of the integrated networking and remote data collection upgrade on PCAS#4.

3. System test at PFPF.

Phase II

1. Design and development of an advanced integrated nuclear material assay and monitoring system to improve and upgrade existing safeguards systems in the PFPF feed storage and process areas. Hardware upgrades will be developed for the existing PCAS #1 and MAGB counters to allow integration with PCAS #4 into a system capable of determining the quantity of feed materials transferred and the direction of transfer for all movements into and out of the feed storage. The Sandia national Laboratories (SNL) image data from the plutonium feed canisters will be integrated into the system. The system will have the capability to transfer instrument health and status data as well as nondestructive assay (NDA) data to a remote location.

2. Testing and qualification of system components, software and hardware, prior to installation at LANL facilities.

3. Installation and integration of hardware upgrades in PFPF.

4. Integrated system tests.

5. Hardware and software manuals.

Software Upgrades

1. Develop and install physics and software upgrades for use by PNC and the inspectorates for neutron multiplicity and add-a-source measurements of scrap and waste, unattended radiation monitoring systems, nuclear material holdup measurements, and other nondestructive assay measurements.

2. Provide documentation, assistance with installation, and training.

2. Sites

This work will be conducted at:

Los Alamos National Laboratory Los Alamos, New Mexico, USA	and	Power Reactor and Nuclear Fuel Development Corporation Tokai-mura, Japan

3. Programmatic Responsibilities

A. LANL will be responsible for providing best efforts within the funding and schedule for the fundamental design work. Any tests or technical assistance shall be provided on a non-interference basis with existing LANL programs.

B. PNC will be responsible for facility specific program direction and the equipment installation interface.

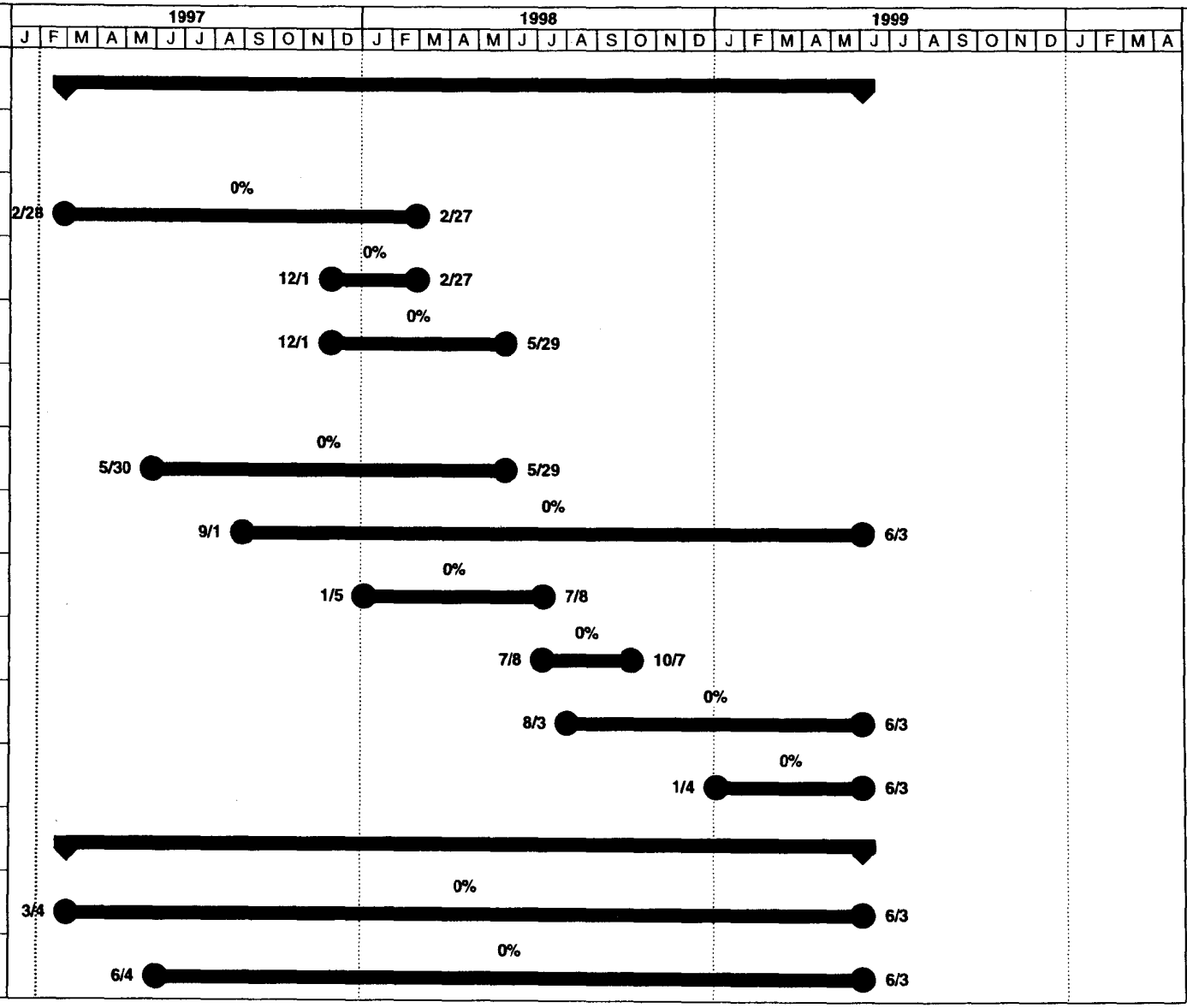
As more detailed program plans are developed, specific responsibilities will be better defined and delineated.

4. Schedule

The projected schedule is shown on the next page. This schedule will be followed on a best-effort basis commencing on receipt of funding and availability of parts.

SG 070 Pacific Rim

ID	Task Name		
1	**PNC Action Sheet 25- Integrated System with Remote Monitoring (LANL)**		
2	**Phase I**		
3	System Design/Development	2/28	2/27
4	Installation	12/1	2/27
5	Test	12/1	5/29
6	**Phase II**		
7	System Design/Development	5/30	5/29
8	Planning & Integration with SNL	9/1	6/3
9	Testing at LANL	1/5	7/8
10	Installation in PFPF	7/8	10/7
11	Testing at PFPF	8/3	6/3
12	Hardward & Software Manuals	1/4	6/3
13	**Software Upgrades**		
14	Development/Installation	3/4	6/3
15	Documentation	6/4	6/3



Project: PNC AS 25
Date: Fri 1/31/97

Task — Summary — Rolled Up Progress
Progress — Rolled Up Task
Milestone — Rolled Up Milestone

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APPENDIX II

PFPF Remote Monitoring and Software Upgrades

Power Reactor and Nuclear Fuel Development Corporation

1. PNC Headquarters

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Department of Energy

1. DOE Headquarters

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2. DOE-Albuquerque Operations Office

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