

ACTION SHEET EVST #31

between

**The Power Reactor and Nuclear Fuel Development Corporation of Japan (PNC)
and
The United States Department of Energy (DOE)
for
Improvement of Dual Safeguards System at Monju EVST**

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 Development and Installation of an additional Containment and Surveillance (C/S) System to improve the dual C/S for the External Vessel Storage Tank (EVST) at the Monju Reactor operated by PNC.

2. Scope of Work

This Action Sheet (AS) provides for a cooperative effort on the design, development and installation of a C/S system to improve the dual C/S for the EVST area at the Monju Reactor. This area is currently monitored by video surveillance and the External Vessel Radiation Monitor (EVRM). However, the EVRM is frequently located away from the EVST area so an additional monitoring method is required. This system will provide for unattended monitoring of access to the External Vessel Storage Tank door valves.

The work performed under this Action Sheet shall be performed at Sandia National Laboratories (SNL), and PNC in accordance with the terms and conditions of the Agreement.

3. Program Management

SNL is responsible for studying and determining, with PNC assistance, the location and type of sensors needed for the installation in the EVST area. SNL will design the local operating network system, procure hardware, provide local operating network software, data collection software, and data review software in addition to providing technical consultation for the installation of the hardware. SNL will provide training to PNC personnel and IAEA personnel on the operation of the system.

PNC is responsible for providing design information, information on plant operation, and other information required for the development of the unattended monitoring system. PNC will provide support for the installation of the sensor nodes and the cabling in the EVST Area.

The work to be done is found in Appendix I. Appendix II identifies key personnel working on this project.

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

SNL shall prepare intermediate reports on the task and circulate them to PNC, DOE, and to other pertinent organizations as requested by PNC.

SNL 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 \$195,000 in United States dollars to conduct the activities related to the completion of an Integrated Safeguards System for the Monju EVST Area as defined in proposal found in Appendix I of this Action Sheet in the following manner:

- a.) A contribution of \$70,000 in United States dollars shall be due and payable upon receipt of an invoice to be issued upon or shortly after the date of signature of this Action Sheet.
- b.) A contribution of \$90,000 in United States dollars shall be due and payable upon receipt of an invoice to be issued in April 1997.
- c.) A contribution of \$35,000 in United States dollars shall be due and payable upon receipt of an invoice to be issued in April 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 SNL 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 24 month 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

Signature: Masami Katsuragawa

Printed
Name: Masami Katsuragawa
Director

Title: International Division

Date: Feb. 21, 1997

For the United States
Department of Energy

Signature: Kenneth Sanders

Printed
Name: Kenneth Sanders

Title: Director
~~International Safeguards~~ Division

Date: Feb. 24, 1997

ACTION SHEET EVST

APPENDIX I

Improvement of Dual Safeguards System at Monju EVST

1. Project Outline

This project involves a cooperative effort to develop and install an unattended monitoring system in the Monju EVST area to improve the dual C/S system for the Monju EVST area. The C/S system will employ a local operating network to collect data in the EVST area and allow the data to be transmitted to a data review computer at an inspection room within the Monju facility. This Action Sheet provides for integration of the software and hardware and for acceptance testing the complete system. In this project, the major activities are as follows:

- 1) Study of the monitoring point taking into account IAEA safeguards requirement and operation requirement
- 2) Study of suitable methods and sensors (e.g.; light beam sensor, microwave sensor etc.) for the system
- 3) Design and development of hardware and software for the system
- 4) Integration of the system software and hardware
- 5) Install the system at Monju facility, provide documentation, and participate in final evaluation.

2. Sites

This work will be conducted at:

Sandia National Laboratories
Albuquerque, New Mexico, USA

Power Reactor and Nuclear Fuel Development Corporation
Monju Construction Office
Tsuruga, Fukui, Japan

3. Programmatic Responsibilities

- A. SNL will be responsible for providing best efforts within the funding and schedule for the conceptual design. Any tests or technical assistance shall be provided on a non-interference basis with existing SNL programs.
- B. PNC will be responsible for providing information about the Monju plant design and operation. PNC will be responsible for supporting the installation of the system.

C. SNL and PNC will jointly participate in technical meetings and report preparation.

4. Schedule*

(Schedule shown is by calendar year.)

ID	Task Name	1997				1998			
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
1	Activities								
2	Review of Facility design and operation	████████							
3	Study of monitoring points and methods	██████							
4	Development of detailed project plan	████████							
5	Approval of project plan by PNC, SNL		████						
6	Design and develop hardware and software			██████████					
7	Integrate hardware and software for the system				████████				
8	System test					██████			
9	Installation and acceptance test						████		
10	Final evaluation						████		
10	Documentation								
11	Interim report, as required			██████████					
12	Final report and operation manual						██████████		
13	Technical meetings, as required	██████████				██████████			

* The schedule will be followed on a best-effort basis commencing on receipt of funding and availability of parts.

**ACTION SHEET EVST
APPENDIX II
Key Personnel**

Improvement of Dual Safeguards System at Monju EVST

Power Reactor and Nuclear Fuel Development Corporation

1. PNC Headquarters

Tetsuo Ohtani, General Manager
Safeguards Office
Nuclear Material Control Division
Power Reactor and Nuclear Fuel Development Corporation
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Takeshi Kawamura, General Manager
International Cooperation Office
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Tomonori Iwamoto, Assistant Senior Scientist
Safeguards Office
Nuclear Material Control Division
Power Reactor and Nuclear Fuel Development Corporation
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2. Monju Construction Office

Hiroshi Hiroi, General Manager
Reactor and Systems Engineering Section
Monju Construction Office
Power Reactor and Nuclear Fuel Development Corporation
1, 2-Chome, Shiraki
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Department of Energy

1. DOE Headquarters

Kenneth Sanders, Director
International Safeguards Division
Office of Arms Control and Nonproliferation (NN-44, GA045)
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John Capps
International Safeguards Division
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2. DOE-Albuquerque Operations Office

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Science and Technology Transfer Division
DOE/Albuquerque Operations Office
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3. Sandia National Laboratories

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