

BEAM DIVISION DEPARTMENTAL PROCEDURE

BD/MECHANICAL SUPPORT

BDDP-ME-0706

ANTIPROTON SOURCE APO WATER SYSTEMS INSPECTION

PROCEDURE

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REVISION NO: _____ REVISION ISSUE DATE: _____

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1.0 PURPOSE AND SCOPE

The purpose of this procedure is to establish the necessary methods and outline the potential hazards associated with insuring that the AP-0 water system are well-maintained. This procedure covers the collection lens, proton lens, pulsed magnet and beam dump water systems, located on the East side of the AP-O Target Hall building. A procedure involving, at minimum, semi-annual visual inspections is outlined in this document. It is expected that this procedure shall be followed at a minimum the beginning of the second and fourth quarters of each year, or as required for service or repairs.

The Beams Division control system continually logs water system data. Pressure and flow for each system is logged. This data is to be checked daily by the responsible technicians. When the flow or pressure in any one of the four systems is out of its range, this procedure is to be followed. If "make up" water needs to be added, it should be noted in the "action" taken section of the form.

2.0 RESPONSIBILITIES

At the request of the Antiproton Source Department, Mechanical Support Department personnel will coordinate all necessary pre-planning tasks, interface with appropriate Beams Division Radiation Safety personnel, and perform the necessary inspection of the AP-O water systems.

2.1 TRAINING

All personnel participating in the water systems inspection activity shall have current Radiological Worker and Radioactive Waste Disposal training.

Verification may be found on the monthly Beams Division Safety Training printout, the TRAIN database, or by contacting the Beams Division ES&H Department. If required, the BD/Radiation Safety Group will specify additional training prior to turning on or off the AP-0 Water System.

3.0 SUPPORTING DOCUMENTS

3.1 INSPECTION FORM

3.0.1 Attachment 1, AP-0 Water System Inspection Form.

3.2 PROCEDURE REFERENCES

3.2.3 Procedure for Turning On/Off the Antiproton Source Lithium Lens Water System: BDDP-ME-0702

4.0 INSTRUCTIONS

4.1 PRELIMINARY ACTIVITIES

Before inspecting the AP-0 Water Systems, certain preliminary activities must be addressed. The BD/Radiation Safety Officer shall be notified of the impending inspection. This procedure to be followed only to inspect the water systems. If any work is to be done, beam to AP-0 shall be disabled prior to and during work being performed on the water systems, and lead personnel must have a Pre-job Planning meeting with the Beams Division Radiation Safety Officer (BD/RSO) or her/his designee. The purpose of such a meeting is to estimate and minimize potential hazards of radiation and tritium exposure workers may encounter during the repair of the water systems.

4.2 ACCESS TO THE AP-0 WATER CAGE

The water cage is located on the south wall of AP0 behind the vault enclosure. ***All personnel entering the AP-0 water cage shall be monitored with film badges and personnel dosimeters. Minimum protective clothing requirements include rubber gloves, coveralls, rubber lined foot covers, and safety glasses.*** Additional requirements may be posted locally at the water cage entrance or may be specified by Radiation Safety personnel. The keys required for access to the water cage area must be checked out by the Crew Chief in the BD/Main Control Room. Permission of the Beams Division Radiation Safety Officer (BD/RSO) is required prior to checking out the AP0 water cage key.

SPECIAL NOTE: If, upon entering the AP-0 water cage area, spilled water is on the floor outside of the pump skid drip trays or spraying water is present in the water cage. DIAL X 3131 immediately and notify the emergency operator that radiation safety assistance is needed. DO NOT attempt to clean up the spill. Wait for trained personnel with the proper equipment

4.3 INSPECTION OF THE WATER SYSTEMS

With permission of the Crew Chief and BD/RSO, the AP-O water cage key is obtained and beam to the target station is turned off. The cage may then be accessed. A visual inspection is done on the proton lens, pulsed magnet, beam dump and the collection lens water systems. This inspection consists of looking for small leaks, rusty or corroded parts and then applying a corrective action if needed. To document the inspection, an AP-0 Water System Inspection Form must be filled out stating the time, date, and any necessary corrective action. These documents will be stored at AP-O building, (inside test cage area).

Target Station personnel will maintain an inventory of spare parts necessary repairs.

5.0 CONTROLLED COPY DISTRIBUTION

- 5.0.1 Reference Appendix A. The Mechanical Support Department Head is responsible for approving Appendix revisions.

ATTACHMENT 1
AP-O WATER SYSTEM INSPECTION CHECKLIST

Proton Lithium Lens Water System:

Leaks?	_____	Yes _____	No _____
Rust?	_____	Yes _____	No _____
Other?	_____	Yes _____	No _____
Action Taken:	_____	Yes _____	No _____

Pulsed Magnet Water System:

Leaks?	_____	Yes _____	No _____
Rust?	_____	Yes _____	No _____
Other?	_____	Yes _____	No _____
Action Taken:	_____	Yes _____	No _____

Beam Dump Water System:

Leaks?	_____	Yes _____	No _____
Rust?	_____	Yes _____	No _____
Other?	_____	Yes _____	No _____
Action Taken:	_____	Yes _____	No _____

Collection Lithium Lens Water System:

Leaks?	_____	Yes _____	No _____
Rust?	_____	Yes _____	No _____
Other?	_____	Yes _____	No _____
Action Taken:	_____	Yes _____	No _____

Signature

Time

Date

BDDP-ME-0706

Rev. 1

ATTACHMENT 1

APPROVED _____

DATE _____

APPENDIX A: Controlled Copy Distribution List

<u>Controlled Copy No.</u>	<u>Recipient</u>
1	Mechanical Support Department Head Fritz Lange
2	Antiproton Source Department Head Dave McGinnis
3	BD ES&H Department Head Mike Andrews
4	Responsible Engineer Jeff Bielicki