



The Source

July 1993

Number 3



← On June 17, Argonne was the site for Secretary of Energy Hazel O'Leary's 1993 meeting with the Directors of the national laboratories under Department of Energy (DOE) purview. Before speaking to Argonne employees in the afternoon, the Secretary, along with Martha Krebs, nominee for Director of the DOE Office of Energy Research, joined 37 APS employees for an informal buffet lunch. The Secretary (at left in photo) is shown in animated conversation with Susan Barr (center, XFD-USR) and APS Associate Laboratory Director David Moncton. The Secretary later expressed her pleasure with the experience of meeting with APS people.

Chemical-Hazard Communication - Watch It!

Recently, a technician working in an APS laboratory received chemical burns after mixing ethanol and nitric acid. Three other individuals were treated for inhalation of fumes from the spill and then released from the hospital. Argonne's aggressive investment of effort and dollars in safety equipment and training assured that a safety shower was nearby, and that two alert APS employees called 911 within seconds of the incident. These factors, together with the rapid response of the ANL emergency team, minimized the severity of the injury. The technician is now recovered and back at work. When asked what he had learned from this incident, the technician replied, "I certainly won't trust non-commercially labeled containers unless I did the labeling."

According to Bretherick's Handbook of Reactive Chemical Hazards, the combination of ethanol and nitric acid is described



as being at best "...a completely unpredictable approximation to a nitric acid-alcohol rocket propulsion system." The technician did not mix the two materials intentionally. The ethanol was in a container mislabeled "nitric acid." The contents of the supposed nitric acid container were poured into a container of waste acid when the technician, who was in the process of moving chemicals to a new labora-

tory, took advantage of the opportunity to do some housekeeping.

This incident demonstrates the importance of proper chemical labeling. Inadvertent chemical exposure may cause or contribute to serious hazards such as rashes, burns, sterility, kidney and lung damage, heart ailments, cancer,

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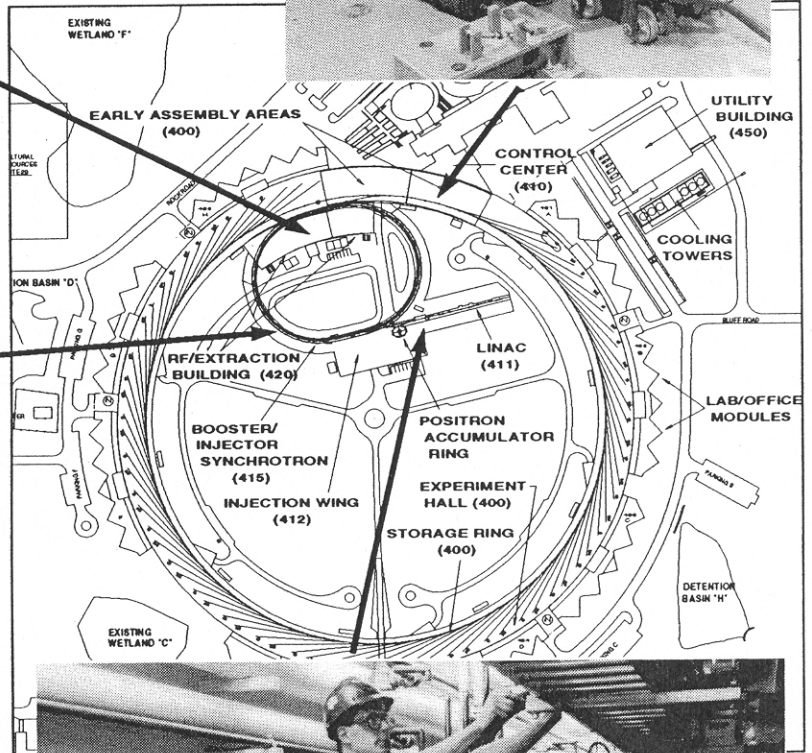
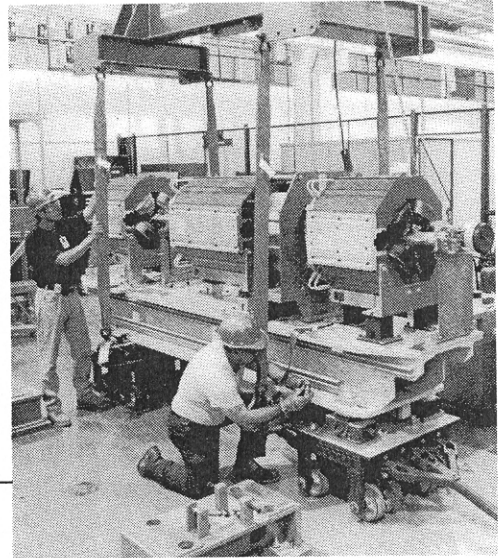
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Progress at the 400 Area

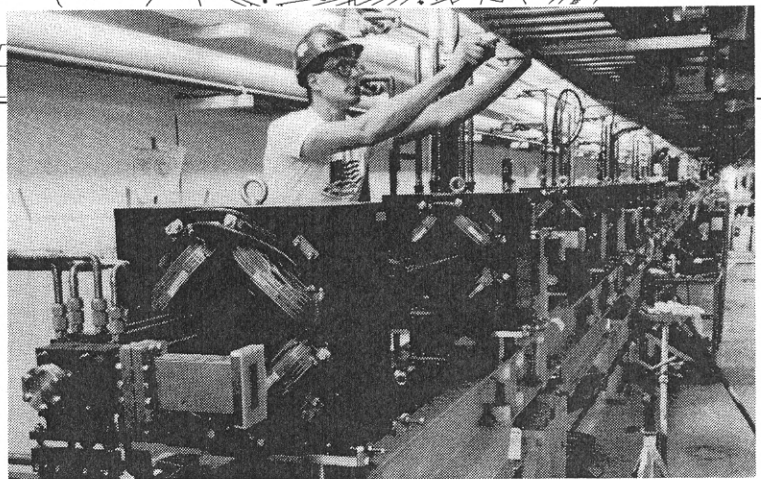


↑ Bldg. 420/Rf/Extraction Bldg. — Beneficial occupancy of the Rf/Extraction building was granted to the Project on May 18, clearing the way for installation of rf equipment.

→ Bldg. 410/Early Assembly Area — Preparations for installation of APS storage ring technical components are under way at the Early Assembly Area. The photo shows Craig Zoerberis (l., of the mechanical-design firm Century 21) and rigger Dean Dudevoire (PFS-DR) hoisting completed storage ring girder #1 onto a transport dolly.

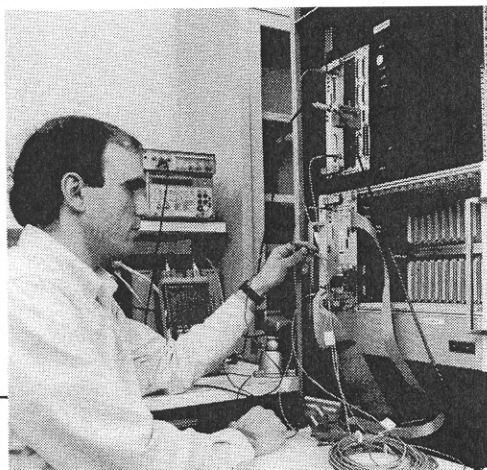


↑ Bldg. 415/Booster Bldg. — Installation of the booster synchrotron continues. Jaromir Penicka (l.) and Joe Error (both ASD-Survey & Alignment) use a laser tracker to align synchrotron magnets to within ± 50 microns.

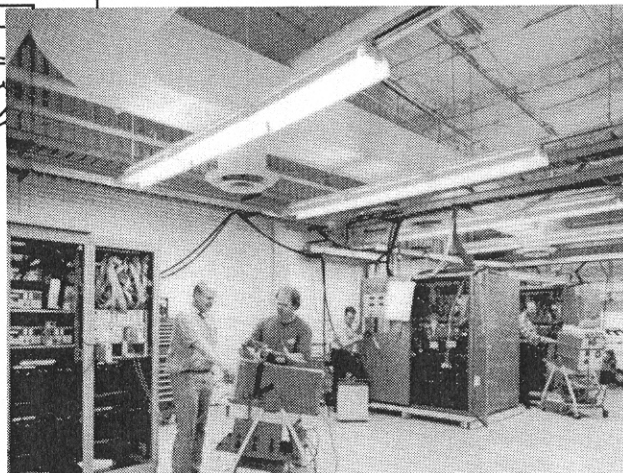
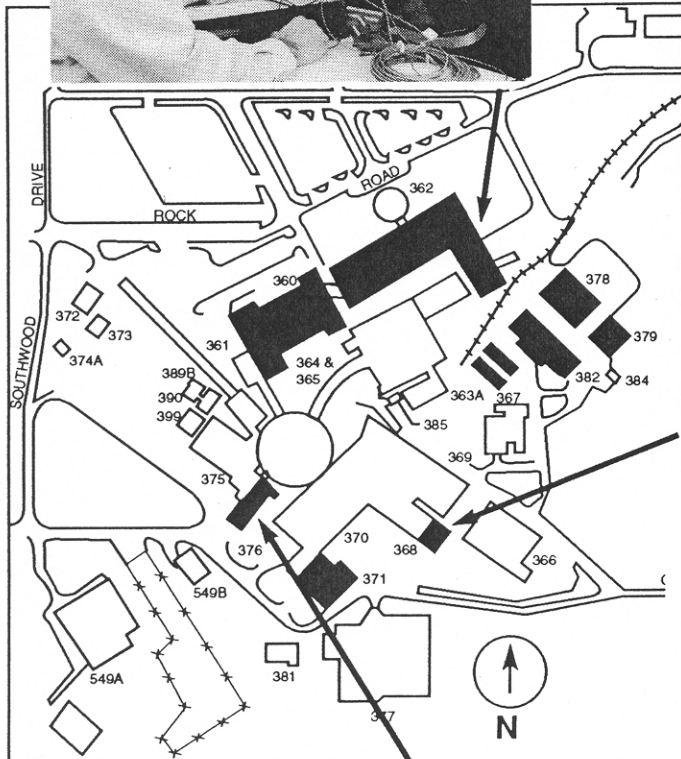


↑ Bldg. 411/Linac — Electrician Glenn Bolander (West Elsdon Electric) shows the flag while working on the positron linac. Installation of the entire linac is nearing completion, with commissioning scheduled to begin soon.

Progress at the 300 Area

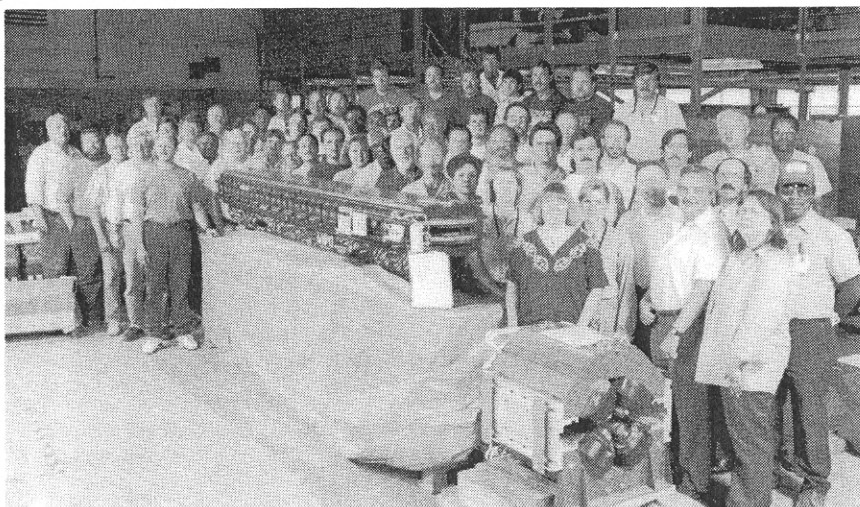


← **Bldg. 362/Diagnostics** — Jeff Kirchman (ASD-Diagnostics and Northern Illinois University) is shown with the prototype APS global orbit feedback system. Jeff is in the Argonne graduate laboratory program and has written his Masters thesis based on his work at APS. The system, developed by the ASD Diagnostics Group, must provide instantaneous positron-beam diagnostics and correction based on a number of criteria. The system prototype was integrated into the storage ring at the Stanford Synchrotron Radiation Laboratory (SSRL), where it successfully responded to the machine's beam-position-monitor signals and controlled the corrector magnets. The results from the SSRL, scaled to APS design criteria, show that the system will provide the very stable beam required by APS users.

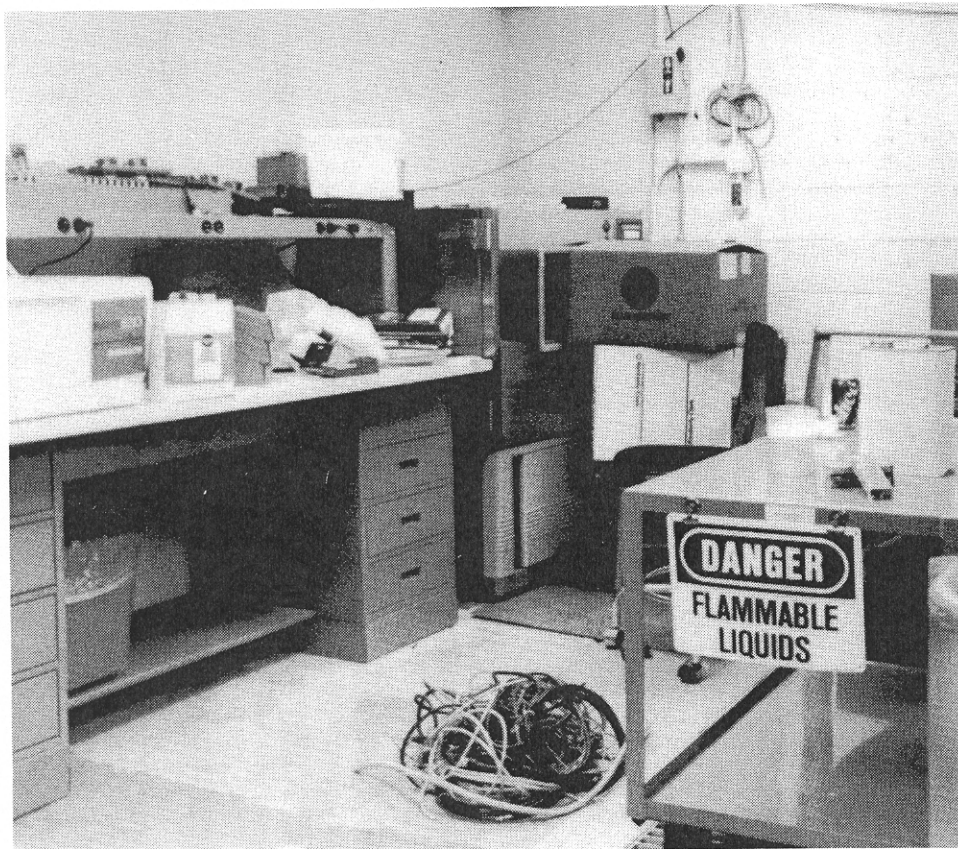


↑ **Bldg. 368/Power Supplies** — Gary Sprau, Phillip McNamara, Anthony Puttkammer, and Masoud Fathizadeh (l. to r., all ASD-Power Supplies Group) in the power supply high-temperature room. Here, power supplies (in this case one positron accumulator ring dipole power supply [left] and two synchrotron quadrupole supplies) are run at full power in a heated environment to find and correct failure points prior to use in the APS accelerators. Some 1500 power supplies will be tested in this room before installation.

→ **Bldg. 376/Magnet Factory** — The entire population of the ASD Magnet Group found themselves irresistibly attracted to the Gauss House on June 24, where they bid a fond (if not downright tearful) farewell to the 68th and final (except for spares) booster synchrotron dipole magnet before it was shipped to the Magnet Measurement and Test Facility in the EAA and thence to installation in the APS booster synchrotron ring.



APS ES&H I.Q. Q&A



← There are several egregious ES&H improprieties and/or outright violations in this ! **staged** ! photo. Identify at least four of them in writing and send your answers to the APS ESH Office, Bldg. 360, E209, no later than August 30, 1993. Winners will receive an actual certificate certifying their ES&H acumen. Answers will be published in the next issue of *The Source*. [Ed. note: Thanks to Jim Lang (ASD-ESH) for his assistance and directorial flair.]

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death, or even worse — an accident investigation. As we have just experienced, chemicals also carry the potential to cause fires, explosions, and other serious accidents.

The ANL ESH Manual states in Chapter 4-1, pg. 4, "Hazard Communication, Labeling":

"Chemicals packaged or repackaged at ANL must be properly labeled to indicate their identity and hazard. The NFPA 704 label [see illustration, page 1] has been adopted for use on site. Labels are available from ANL Stores. The NFPA 704 label is not required if the labeling requirements are met. The chemical identity (including mixture codes) must allow cross referencing by the user to the site chemical inventory and Material Safety Data Sheet file."

In the workplace, each container must be labeled, tagged or

marked with the identity of hazardous chemicals contained therein, and must show hazard warnings appropriate for employee protection. The warning can be any type of message, words, pictures, or symbols that convey the potential hazards of the chemical(s) in the container. Labels must be legible, in English (plus other languages, if appropriate), and prominently displayed.

Material safety data sheets must be made available for every chemical being used. This requirement of the Hazard Communication Act helps ensure the safety of individuals using the chemicals. Material safety data sheets provide information to alert employees to the nature and characteristics of the chemicals they might have occasion to work with. — Richard Hislop

The Source is a vehicle for enhancing communications within the APS Project on matters of technical accomplishments and progress, ES&H, research programs, and management news.

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