MEETING NOTICE

Memorandum For: See list Below

From: Richard Barrett, Chief, Risk Applications Branch, DREP

Subject: ISLOCA - Program Progress Review. Date: February 27, 1990 Time: 8:00 am - 10:00 am Place: 12 B 11

As a follow-up to the ISLOCA Pilot Inspection at Davis-Besse, the RES contractor, Idaho National Engineering Laboratory (INEL) who is also a participant in the Pilot Inspections, has conducted in-depth analyses of the risk associated with the ISLOCA at Davis-Besse. In this Progress Review Meeting, INEL will present the results of its analyses. INFL will also discuss the modeling and methods, as well as the Human Reliability Analysis techniques used.

If you have any questions, please call me at X-20193.

Richard R. Barrett, Chief, RAB, DREP

Any YES.

CC:

T. Murley, NRR J. Sniezek, NRR F. Miraglia, NRR E. Beckjord, RES T. Speis, RES D. Ross, RES F. Congel, NRR J. Partlow, NRR A. Thadani, NRR J. Richardson, NRR C. Thomas, NRR G. Burdick, RES

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Nuclear energy contributes to a cleaner Earth

Environmentalism promises to be one of the hottest issues in the nineties and the "greenhouse effect" is a major topic of utility concern.

Nuclear power has already played an important role in reducing atmospheric emissions from the electric generating sector of our economy, according to the U.S. Council for Energy Awareness. In fact, nuclear energy plants currently reduce national emissions of sulfur oxides by five million tons a year and nitrogen oxides by two million tons a year.

In a guest editorial, ANS member Michael Fox talks about the greening of America. "With the choices available for the generation of electricity, the environmental costs of nuclear energy are among the very smallest," says Fox. "But the scientific community has made the flawed assumption that the facts will speak for themselves. Too few people outside of the technical community know of these achievements, which in turn, hurts energy and science policy in the United States."

The EPA tables compare how energy resources effect the environment. While nuclear reactors do not emit any of these airborne pollutants at the point of generation, significant amounts of electricity are required to produce the nuclear fuel. Since this electricity is largely generated by coal, the emissions associated with the production of nuclear fuel are included in the tables.



INSIDE.



Toledo Edison Company's Davis -Besse Plant sets numerous records for 1989. See page 2.



SIMON, the latest in robot technology from Savannah River Laboratory. See page 3.



Davis-Besse recognized for outstanding perfermance

In 1989, the Davis-Besse Nuclear Power Station completed its best year since the plant came on line in 1977, setting numerous performance records. Based on capacity factor, Davis-Besse ranked among the top 10 nuclear power plants in the United States for 1989.

Principal records set in 1989

- Availability factor 97.1 percent
- Capacity factor 95.6 percent
 Continuous days on line 215
- Monthly gross generation ---
- 690,101 MWh (Dec '89)
- Generation days 354 days

While employees in all areas contributed to the plant's outstanding performance, two programs—maintenance of motoroperated valves (MOVs) and maintenance training—stand out.

MOV maintenance

Davis-Besse prides itself on the maintenance of its 230 MOVs and is a well-known part of the industry's MOV solution. 'On June 9, 1985, the failure of two MOVs after a scram contributed to a loss-of-emergency feedwater event and an unscheduled 18 month outage for Davis-Besse.

While looking into this in atter, Davis-Besse found two causes for the failure...incorrect settings for the torque switch bypass limit switches, and an improper setpoint for the open torque

switches. Surveillance tests conducted on both valves just prior to the event did not reveal the problems.

Testing MOVs by recreating high pressure and flow conditions in actual plant operation can be difficult. Davis-Besse was one of the first plants to use diagnostic equipment for testing MOVs. Through use of the portable diagnostic equipment, plants can accurately determine the general mechanical condition and electrical control setup of a MOV.

Since the 1985 incident, crews set torque switches on a customized basis, rather than by documented and pre-determined numbers. For every valve, the staff has tested and determined the target thrust needed to open and close it against maximum differential pressure, temperature, and flow.

Maintenance supervisors, mechanics, and electricians have worked hard on this project and received excellent support from training, planning, and scheduling.

Maintenance training

Fixing something after it breaks is easy...diagnosing the problem before it breaks another story. Proper training helps expand the ability to diagnose and correct potential problems in plant operation. Davis-Bosse has traditionally emphasized operator training, but in the

Testing MOVs by recreating high pressure and flow conditions in actual plant operation can be difficult. mid-1980s, maintenance training ^{sel} received equal attention. Today, the maintenance training staff totals 14

The foundation for the performance-based training approach is

the plant's use of job task-based qualification manuals. The manuals help journeymen and apprentices make sure nothing is missed. The plant's apprenticeship program was recently approved by the sta of Ohio. The state will provide journeymen certificates to apprentices who successfully complete the Davis-Besse program in I&C (instrument and control), electrical, o. mechanical maintenance.

Davis Besse set up its programs to make training applicable and available. A site weigh computer program helps are been lesson plans for again that put together their own training such to outergency preparedness, engineering, and quality control.

Training improvement extends to operations where more people with hands-on experience are teaching. All training programs offer a "teach the teacher" course for new trainers.

An evaluation program gives management and instructors

An evaluation program gives management and instructors information on the effectiveness of each course.

information of the effectiveness of each course. Reviewed regularly, training programs receive employee input. For every 10 employees in the four key areas of mechanical maintenance, dectrical maintenance, LeC, and station 1 services, there is a council tepresentative. Councils also include the training staff members responsible for that area, maintenance training supervisors, and maintenance superintendents.

Davis-Besse is committed to employee training and believes that their improved training procedures are the root of the plant's success.

 1990. American Nuclear Society. Correspondence and items to be submitted for ANS Utility Quarterly should be addressed to:

> Kim Flesher, Editor ANS Unity Quarterly 563 N. Katistington Ave a Grange Park, R. 60525 Jetephone (208/352-661)

SIMON — the latest in robot technology



Engineers at the U.S. Department of Energy's Savannah River Laboratory are developing a mobile robot that can measure radiation and temperature and provide a televised view of inaccossible areas, such as inside a remotely operated nuclear facility.

Called SIMON, for Semi-Intelligent Mobile Observing Navigator, the robot is the first of its kind with onboard intelligence and radiation resistant components. Four computers make SIMON mobile either on pre-programed paths or under manual remote control. In manual operation, the operator can follow its course on a facility map displayed on a computer console.

SIMON can provide operators with vital information. Its on-board equipment includes three radiation detectors, temperature gauges.

and a moveable television camera. The camera has its own lights and can be extended to a height of 13 feet. Radio and microwave links provide the TV picture, measurement data, and the operator's control.

SIMON is designed to survive the radiation, temperature, and humidity encountered in nuclear facilities and can run six months without maintenance. Mobile robots currently on the market do not have these capabilities and are limited to manual operation. Pivoting on all three of its wheels to change direction, SIMON is also more maneuverable than most other mobile robots.

Oconee Plant Branch settles in

"Duke Power Company and the management of Oconee Nuclear Station has been very supportive of the Oconee Branch and helped create the environment for our initial success," says Richard Bond, plant branch chair. "Our parent section, the Piedmont Carolinas Section, has also helped us with many of the administrative details in getting started."

The Oconee ANS Plant Branch has more than 60 members. In the beginning, many people thought that they could not join the branch because their jobs were not directly related to nuclear power. "We are trying recruit members from all areas of the plant," Bond continues. "We have been most successful in the Southern Division of Dukes Power's Construction/Mainte-nance Department. It now represents nearly one third of our membership."

For tips on starting an ANS plant branch, contact Bond at 803/885-3043.

Public Information Notes and Quotes

"N inkind generates an enormous amount of waste and garbage. It is part of life and living. Wouldn't it be grand if we could reduce the level of toxic garbage caused by our use of energy to a volume of less than one small aspirin bottle t person per year? Good news! This would be the volume of wast: generated it ALL of our energy came from nuclear power plaris! in reality, disposing of nuclear waste is trivial compared to the disporting of non-nuclear wastes, which are currently 'disposed' directly into people's lungs. Nobody is harmed by nuclear waste while thousands die yearly from non-nuclear waste." (From a letter to the editor written by ANS member Charles T Rombough, Fort Worth, TX.)

"Referring to U.S. nuclear plant operation, a former executive director of the American Council on Science and Health notes that 'A recent Roper poll found that half of people believe that radiation releases from nuclear power plants are one of the most serious environmental problems. Yet there has not been one - not one - death or injury to the public from radiation in a quarter-century of commercial operation."" (From "Nuclear Electricity and Energy Independence," 1989 booklet of the U.S. Council for Energy Awareness.)

Plant Security reprints available

Reprints of the 24-page special section on plant security that appeared in December 1989 Nuclear News are now available from ANS. Written requests should be adressed to: Maureen Albright ANS headquarter: 555 N. Kensington Ave. La Grange Park, IL 60525. Act today ..., limited supply! Visit "Music City, USA" for the 1990 ANS Annual Meeting, the concurrent Topical Meeting: Advances in Human Factors Research on Man/Computer Interactions: Nuclear and Beyond," and the ANS Nuclear Power & Technology Exhibit

June 10-14, 1990 Opryland Hotel Nashville, Tennessee

The Opryland Hotel is the centerpiece of Opryland USA. Famous attractions, combined with Tennessee's southern hospitality, make Opryland a vacation wonderland.

The technical program will feature papers on nuclear education and training, nuclear reactor safety, reactor operations, fuel cycle waste management, power, nuclear criticality safety, biology and medicine, and others in panel sessions and oral presentations.

Plenary sessions will address the meeting theme: "Nuclear Energy: Planning for the 21st Century." Speakers scheduled for each plenary session will be listed in the mid-April <u>Nuclear News</u> Preliminary Program, or for more information contact the ANS Meetings/Exhibits Department at 708/352-6611.

THIRD UTILITY POSTER DISPLAYS In the ANS Nuclear Power & Technology Exhibit

Uclities are invited to participate in the third informal utility poster dis lays being held during the ANS Annual Meeting. Sponsored by the ANS Reactor Operations Division, the utility poster displays will be a part of the Nuclear Power & Technology Exhibit during June 10-13, 1990, in the Opryland Hotel's Ryman Exhibit Hall B.

Take this opportunity to gain recognition for your accomplishments by reserving display space. Meeting attendees were greatly impressed by the most recent utility poster displays held in Atlanta. For more information, call Patricia Pollock at 708/352-6611.

New security committee in ANS Power Division

As a result of a very successful and informative winter meeting in San Francisco, the ANS Power Division's Executive Committee decided to establish a working security committee to support security professionalism in nuclear security.

Participation and guidance from the NRC will be a vital part of the committee's workshops and training programs. Programs will be geared to security professionals and utility management executives.

The 1990s will bring a vital and demanding profile for plant security. Cost control through implementation of effective programs and systems will become main topics of review.

Impacting systems and new regulations will be the topics to discuss for the 1990s, by plant and security management. For more information on the Security Committee and its programs, contact William F. Harrington, Director of Security, Safety & Fire Protection, New York Power Authority, 123 Main St., White Plains, NY 10601.



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