



Arizona House of Representatives House Majority Research REPORT

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To: JOINT LEGISLATIVE AUDIT COMMITTEE
Senator Blendu, Chairman
Representative Knaperek, Vice Chairman

Date: December 16, 2005

Subject: Sunset Review of the Arizona Radiation Regulatory Agency and Hearing Board

Attached is the final report of the sunset review of the Arizona Radiation Agency and Hearing Board, which was conducted by the Senate Commerce and Economic Development and the House of Representatives Environment Committee of Reference.

This report has been distributed to the following individuals and agencies:

Governor of the State of Arizona
The Honorable Janet Napolitano

President of the Senate
Senator Ken Bennett

Speaker of the House
Representative Jim Weiers

Senate Members
Senator Barbara Leff, Cochair
Senator Ken Chevront
Senator Richard Miranda
Senator Jay Tibshraeny
Senator Jim Waring

House Members
Representative Michele Reagan, Cochair
Representative Ray Barnes
Representative Steve Huffman
Representative Leah Landrum Taylor
Representative Kyrsten Sinema

Arizona Radiation Regulatory Agency and Hearing Board
Arizona State Library, Archives & Public Records
Office of the Auditor General

Senate Majority Staff
Senate Research Staff
Senate Minority Staff
Senate Resource Center

House Majority Staff
House Research Staff
House Minority Staff
Chief Clerk

COMMITTEE OF REFERENCE REPORT

Senate Commerce and Economic Development and House of Representatives Environment
Committee of Reference

ARIZONA RADIATION REGULATORY AGENCY AND HEARING BOARD

Background

Pursuant to § 41 – 2953, Arizona Revised Statutes, the Joint Legislative Audit Committee (JLAC) assigned the sunset review of the Arizona Radiation Regulatory Agency (ARRA) and Hearing Board to the Senate Commerce and Economic Development and House of Representatives Environment Committee of Reference for review.

Laws 1980, Chapter 206, abolished the Arizona Atomic Energy Commission and established the Arizona Radiation Regulatory Agency. The enactment acknowledged that any use of radiation and exposure to radiation may carry some risk. The legislature also recognized that radiation use is an evolving technology of a highly complex nature. Therefore, the State adopted a policy to protect the public health and safety by regulating the use and sources of radiation with methods and procedures relating to radiation which are demonstrated to be safe; and maintain exposure sources of radiation in amounts as low as reasonably achievable with good radiation protection planning and enforcement.

The Radiation Regulatory Hearing Board (Board) was also established in 1980. The Board conducts hearings and reviews orders of ARRA or the Director. The Board is a vehicle for appeals by any person adversely affected by an order of ARRA relating to the modification of a license, revocation of a license, assessment of a civil penalty or an escalated enforcement action. Statute requires the Board to make findings of fact and, by order, affirm, revoke or modify the order of ARRA.

Committee of Reference Sunset Review Procedures

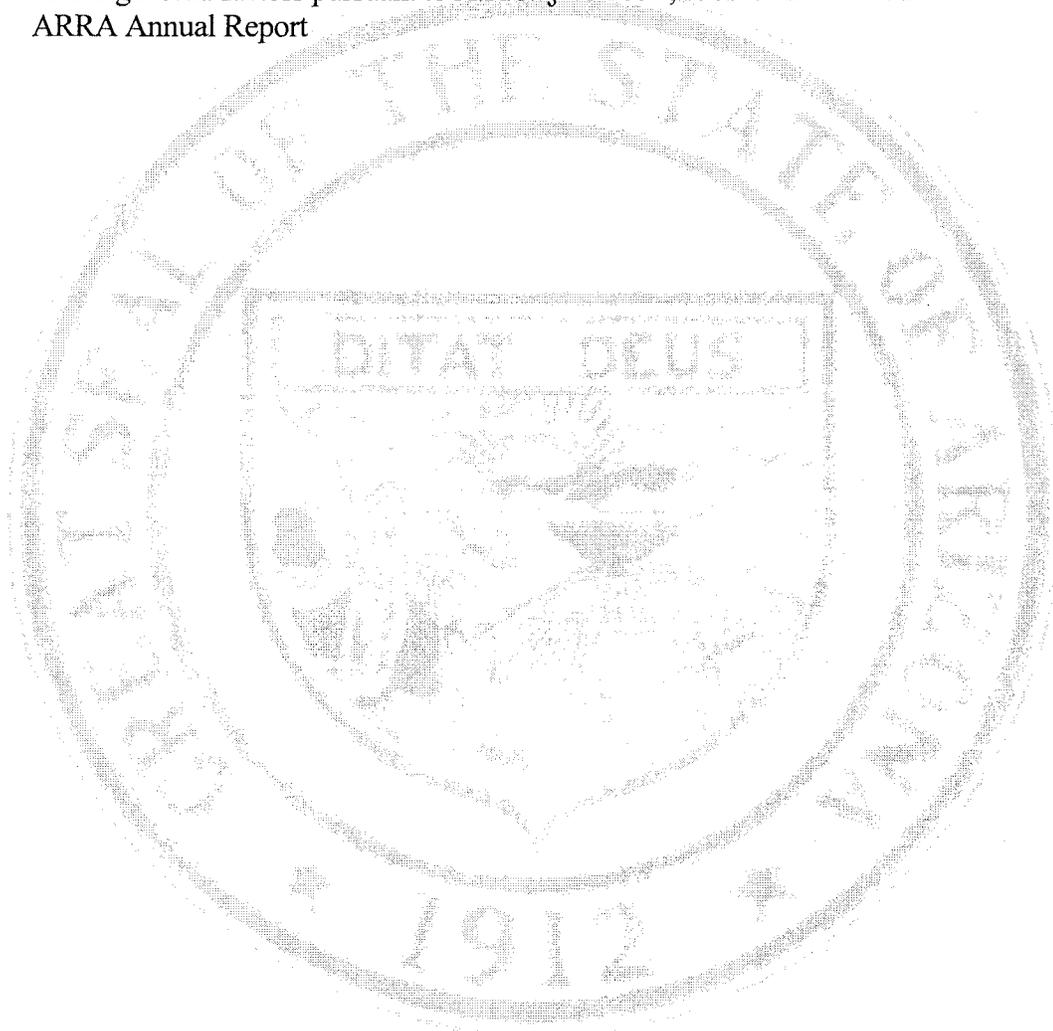
The Committee of Reference held one public hearing on Wednesday, November 16, 2005 to review the Agency responses, as required by A.R.S. § 41-2954, subsections D and F, and to hear and accept public testimony. Testimony was received from Aubrey Godwin, Director, Arizona Radiation Regulatory Agency; Dave Crozier, Senior Government Liaison Officer, Palo Verde Nuclear Power Plant; Kenneth Mossman, Professor of Health Physics, Arizona State University; Debbie Keyes, Radiation Safety Administrator, AMEC Earth & Environment, Incorporated; and Dan Silvain, Associate Director, Radiation Control Office, University of Arizona.

Committee of Reference Recommendations

The Committee of Reference recommended that the Arizona Radiation Regulatory Agency and Hearing Board be continued for ten years and that four FTEs are restored to the agency.

Attachments

- 1) Meeting Notice
- 2) Minutes of the Committee of Reference Meeting
- 3) Agency factors pursuant to A.R.S. § 41-2954, subsections D and F
- 4) Hearing Board factors pursuant to A.R.S. § 41-2594, subsection D and F
- 5) ARRA Annual Report



ARIZONA STATE LEGISLATURE

INTERIM MEETING NOTICE OPEN TO THE PUBLIC

SENATE COMMERCE AND ECONOMIC DEVELOPMENT AND HOUSE OF REPRESENTATIVES ENVIRONMENT COMMITTEE OF REFERENCE FOR THE SUNSET HEARING OF THE ARIZONA RADIATION REGULATORY AGENCY AND HEARING BOARD

Date: Wednesday, November 16, 2005

Time: 9:00 a.m.

Place: House Hearing Room 5

AGENDA

1. Call to Order – Opening Remarks
2. Presentation of the Sunset Review on the Arizona Radiation Regulatory Agency and Hearing Board
3. Public Testimony
4. Discussion and Recommendations by Committee of Reference
5. Adjourn

Members:

Senator Barbara Leff, Co-Chair
Senator Ken Chevront
Senator Richard Miranda
Senator Jay Tibshraeny
Senator Jim Waring

Representative Michele Reagan, Co-Chair
Representative Ray Barnes
Representative Steve Huffman
Representative Leah Landrum Taylor
Representative Kyrsten Sinema

10/31/05
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ARIZONA STATE LEGISLATURE
Forty-seventh Legislature – First Regular Session

SENATE COMMERCE AND ECONOMIC DEVELOPMENT AND
HOUSE OF REPRESENTATIVES
ENVIRONMENT COMMITTEE OF REFERENCE
FOR THE SUNSET HEARING OF THE
ARIZONA RADIATION REGULATORY AGENCY AND HEARING BOARD

Minutes of Meeting
Wednesday, November 16, 2005
House Hearing Room 5 -- 9:00 a.m.

Chairman Reagan called the meeting to order at 9:13 a.m. and the Members present were recognized by the Cochairs.

Members Present

Senator Miranda
Senator Tibshraeny
Senator Waring
Senator Leff, Cochair

Representative Barnes
Representative Landrum Taylor
Representative Sinema
Representative Reagan, Cochair

Members Absent

Senator Chevront

Representative Huffman

Speakers Present

Aubrey Godwin, Director, Arizona Radiation Regulatory Agency
Dave Crozier, Senior Government Liaison Officer, Palo Verde Power Plant
Kenneth Mossman, Professor of Health Physics, Arizona State University
Debbie Keyes, Radiation Safety Administrator, AMEC Earth & Environmental, Incorporated
Dan Silvain, Medical Physicist/Consultant; Associate Director, Radiation Control Office,
University of Arizona; Radiation Safety Officer, American Red Cross, Tucson

PRESENTATION

Aubrey Godwin, Director, Arizona Radiation Regulatory Agency, stated that the agency is divided into four functional areas: The X-ray Compliance Program, Radioactive Materials Non-Ionizing and Particle Accelerator Program, the Radiation Measurement Laboratory Program, and the Emergency Response Program. The Hearing Board hears appeals regarding the Director's decisions and assists in developing rule-making packages.

- The X-ray Compliance Program registers owners of x-ray equipment and inspects the equipment to ensure it is being used according to state rules and requirements.
- The Radioactive Materials Non-Ionizing and Particle Accelerator Program licenses radioactive material users, such as nuclear medicine facilities, industrial radiography facilities, etc. Non-ionizing facilities include tanning booths, lasers used to remove hair or tattoos, etc. The dental profession also uses certain types of treatments. Particle accelerators, for the most part, are giant x-ray machines that are very powerful and emit a lot of energy usually used to produce x-rays or radioactive materials for diagnostic purposes.
- The Radiation Measurement Laboratory Program does environmental monitoring around fixed nuclear facilities, such as the Palo Verde Power Plant. There is also a requirement in statute to monitor uranium mining and milling sites. The Palo Verde part of the program was not sustained during the budget crunch some years ago and has not been restarted. There is a proposal to restart the uranium mining operation, but the agency would not be in a position to conduct monitoring unless funding is provided.
- The Emergency Response Program prepares and tests agency response to major radiation events, such as a problem at Palo Verde or weapons of mass destruction. Training is provided to first responders who initially detect and determine what radiation is involved in transportation events or weapons of mass destruction. For major emergencies, the agency reorganizes from these functional areas and divides into two identical sections, so there would be a 12-hour work shift with half agencies on each shift to provide the necessary monitoring and assessment. Because of staff reductions, the second shift has not been fully funded, which has been offset to some degree by consultants, and volunteers will be needed from other agencies.

Mr. Godwin related some problems:

- Two x-ray inspectors were lost during the budget crunch in 2001, which represents about 1,200 inspections per year. As a result, the agency is now 40 percent behind in conducting inspections. The ARA also lost one radioactive materials inspector, so those inspections are behind between 10 and 15 percent.
- The Statewide Monitoring Program was shut down, which caused concern in certain areas in northwest Arizona relating to monitoring and the Nevada test site.
- The Accenture program, a combination of telecommunications and Internet services in the state, is going to double telephone and Internet costs by FY 2007. Unfortunately, the budget already passed and did not include that cost, which is about \$22,000.

He advised Chairman Reagan that the annual budget is composed of \$1.2 million from the state and other funding amounting to \$2.5 million from the Department of Energy for monitoring and training people along I-40 due to significant shipments to the Carlsbad, New Mexico area, the Environmental Protection Agency (EPA) for the radon program, and the Palo Verde Power Plant which goes through the General Fund, but is a direct tax on the plant for additional requirements for emergency planning required by the Nuclear Regulatory Commission (NRC).

Mr. Godwin clarified for Mrs. Landrum Taylor that monitoring is not necessary in the northwest part of the state, but people have the perception that if there is no monitoring, releases from the Nevada test site would not be detected. There is currently no testing going on at the test site, but some concerns were expressed. The main concern is that if the reported startup of the uranium mining industry takes place, the agency will not be able to monitor the mines.

Mr. Godwin pointed out that 11 million curies of cobalt were transported via I-40 this calendar year and about 13 million curies were transported last year. It is a main East-West route for transporting shipments from Canada to the Far East, so the agency maintains the ability to respond in the event there is an accident. Shipments typically range from 100,000 curies to close to 500,000 each, which is rather large. The Transportation Committee and Members of the Legislature are informed about those shipments four or five days prior. These are shipments the agency knows about specifically. Others the agency would not know of are much smaller, such as nuclear medicine shipments, and those are not tracked individually. He acknowledged to Chairman Reagan that the ARA is the only agency monitoring radioactive materials going through the state.

Mr. Barnes noted that the Arizona Department of Public Safety (DPS) has a hazardous materials unit that continually monitors highways. Mr. Godwin clarified that DPS officers are the first responders for which the ARA provides training, and in some cases, instruments.

Mr. Godwin relayed that the ARA becomes involved if DPS has a situation reported where there is an accident or an inspection is initiated for some reason and there is a problem. If word is received through a different source that a shipment has a problem, the agency would initiate action on its own or ask DPS to help stop the shipment for inspection. About a year ago, a call was received from DPS about a major shipment believed to be leaking in the Prescott area. The agency checked it out and it turned out not to be losing material. It was kind of a small quantity, but represented a major error by the Department of Energy in the way it was packaged. The EPA, or Atomic Energy Act Materials, a subgroup of the overall radiation program, does not have any jurisdiction. Jurisdiction at the federal level is through the Nuclear Regulatory Commission.

He advised Senator Leff that there is an inspection program to make sure licensed radioactive materials users and x-ray users are following the rules. For transportation, the agency coordinates not only with DPS, but provides training for Motor Vehicle Division (MVD) personnel to conduct inspections at the ports of entry. All vehicles are not stopped, only those where an inspection is needed. DPS can stop trucks any time on the highway and pull an inspection. Hazardous materials people and Commercial Vehicle Safety Alliance inspectors conduct radiation inspections. He related that it is not possible to determine if a truck contains radioactive material just by looking, but certain instruments can ascertain if the radioactive levels are appropriate.

When Senator Leff asked what would happen if there is a problem with cobalt, Mr. Godwin responded that the most likely event to happen would be if someone is injured in an accident, but there would be no exposure from the cobalt because shipping containers are designed to survive

fairly heavy crashes. Many people try to develop ways to transport cobalt, though, and if containment were breached, those sources could represent a threat to anyone within 100 feet.

Senator Leff indicated that she is concerned about terrorists or radicals. Mr. Godwin agreed, but explained that one of the reasons the agency is notified about shipments is to be aware if a shipment is diverted, which would mean someone could make a weapon of mass destruction.

Senator Leff asked if anything could leak while being shipped across the state that would be dangerous to the community. Mr. Godwin said there have been two incidents involving a leak since he has been Director and both originated with the federal government. He acknowledged that it is possible to have a leak that is not visible. The agency does not have a monitoring program. Federal funds were requested for that purpose, but there is no system for checking every vehicle that travels through the state.

PUBLIC TESTIMONY

Dave Crozier, Senior Government Liaison Officer, Palo Verde Power Plant, testified that Palo Verde has a very comprehensive and robust emergency plan to deal with an unlikely emergency at Palo Verde, and the ARA is an essential part of the plan. The federal government requires emergency plans to be in place with state response agencies. Without those agreements, Palo Verde would have to be shut down and would not be able to operate. The agency is a key ingredient to their success.

Senator Leff remarked that there appears to be a safety gap in inspecting shipments through the state.

Kenneth Mossman, Professor of Health Physics, Arizona State University, conveyed that as a former radiation safety officer at Arizona State University, he worked very closely with the ARA and endorses continuation of the agency. In the 10 years as a radiation safety officer, unannounced inspections were conducted by the ARA, but the frequency of inspections decreased because of staffing shortages. ASU is now the largest single campus university in the country and the research portfolio has rapidly expanded in terms of usage of lasers and radioactive material. The agency was critical to operating a safe program for faculty, staff and students.

Mr. Godwin advised that as part of inspections, the ARA looks at how licensees transport radioactive material and inspect licensees at that point. The packaging is also inspected before it is turned over to a commercial carrier, where it is often inspected by the U.S. Department of Transportation. Again, there is one inspector for a large region so it is not something that is done every day, as well as by the MVD on occasion and DPS as officers desire to conduct inspections. When exceptions to meeting the requirements are found, the agency becomes involved, but there is no reason to hold a truck if the requirements are met.

Mr. Godwin clarified that the agency lost a total of four positions as a result of budget cuts, two in x-ray, one in radioactive materials, and one in the laboratory. Three of those were inspectors.

Those position cuts affect the safety of the community as far as radioactive materials, particularly in x-ray because when someone has an x-ray taken there is a 40 percent chance it has not been inspected by the state within the recommended period of time.

Senator Leff remarked that is very scary with all the x-rays people have and wondered if it is possible to recommend that the agency be restored. Mrs. Landrum Taylor commented that it is very critical as far as safety to make sure the agency has the appropriate staff to conduct inspections, so she supports full funding.

Mr. Godwin indicated to Ms. Sinema that approximately \$270,000 would be needed to restore the four positions.

Mrs. Landrum Taylor stated that with the state growing in leaps and bounds, \$270,000 to get the agency up to par is priceless when it comes to protecting millions and millions of lives.

Mr. Godwin related to Senator Waring that there are about 12,000 x-ray tubes in the state, and an inspector is expected to inspect about 600 per year; however, it is not possible to maintain that rate because, with the current turnover, a fair amount of time is spent training people. The length of time to conduct an inspection depends on the type of unit and varies from 10 to 15 minutes for the equipment part to close to an hour for more complex units, plus time to address issues at the facility such as reviewing certain records, etc. For radioactive material, the amount of time varies depending on the type of equipment. For a gauge for testing density of construction materials at a construction site, it could take a few minutes, but to review the records, etc., it could be about an hour or longer if the inspector has to go somewhere else to view the records. For a complex operation like the universities where there are research labs, it could take up to an hour. There is some travel time as the inspectors are all based in Phoenix.

He conveyed that there are four x-ray inspectors, but one is dedicated solely to mammography. That position is paid by the federal government, so there are three inspectors inspecting 12,000 tubes, which is about one inspector per 4,000. If only 600 per year are inspected, it takes seven years to complete the inspections. It is best to conduct inspections at least every four years, and some need to be done annually like mammography, and hospitals every two years, which is why the ARA is lagging in inspections.

Debbie Keyes, Radiation Safety Administrator, AMEC Earth & Environmental, Incorporated, stated that AMEC has an industrial radiography license and a license for moisture density gauges in Arizona. She indicated that local oversight by the ARA is preferable to NRC oversight, which is what the company would go to if the ARA is not continued. AMEC holds 13 licenses in 10 different states and an NRC license. Communicating with the NRC is much different than with the ARA as it takes almost two years to obtain an answer from the NRC to a simple jurisdictional question and six months for a license amendment to be processed. If the ARA is not continued, there would be a large economic impact on the smaller companies in Arizona because license fees would be about ten times more the first year and eight times more every year thereafter. The company is more than willing to pay an increased fee to ARA rather than pay ten times the fee to the NRC.

Ms. Keyes added that a problem that can and would arise is when the NRC has jurisdiction over a state and there is no local entity like the ARA, companies are legally supposed to get reciprocity from the NRC before entering the state to perform work. People will not get the reciprocity, but enter the state, do the job, and leave the state without anyone's knowledge. It would be very possible for the company to lose a source in Arizona and no one would know until it is too late, so local oversight is very important for any state.

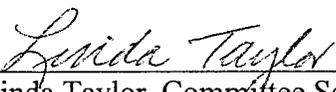
Dan Silvain, Medical Physicist/Consultant; Associate Director, Radiation Control Office, University of Arizona; Radiation Safety Officer, American Red Cross, Tucson, said that without the ARA, some of the medical things that are done in Tucson would not happen. Procedures are performed that involve amounts of radioactivity to cure cancer, but reimbursement for the procedures is not available. By calling the ARA to get an answer, it is possible to devise ways and means to minimize the cost and do it in a safe manner. Also, several years ago, he was involved in Kartchner Caverns and there was a tremendous amount of concern about radon exposure to workers at the radon facility. He worked with the ARA to develop a full radiation safety program for Kartchner Caverns. The ARA cares about the citizens of Arizona and wants to make sure everyone is safe, so he wholeheartedly supports the agency's existence.

RECOMMENDATIONS

Senator Leff moved that the Committee of Reference recommend to the Legislature that the Arizona Radiation Regulatory Agency and Hearing Board be continued for 10 years. The motion carried by a roll call vote of 8-0-0-2 (Attachment 1).

Senator Leff moved that the Committee of Reference recommend to the Legislature that the four FTEs be restored to the agency. The motion carried by a roll call vote of 7-0-1-2 (Attachment 2).

Without objection, the meeting adjourned at 10:12 a.m.



Linda Taylor, Committee Secretary
November , 2005

(Original minutes, attachments, and tape are on file in the Office of the Chief Clerk.)

ARIZONA RADIATION REGULATORY AGENCY RESPONSE TO THE COMMITTEE OF REFERENCE

1. The objective and purpose in establishing the agency.

Response: Laws 1980, Chapter 206 § 1 state:

“It is declared to be the policy of this state to protect the public health and safety by regulating the use and sources of radiation to provide for: (1) use of methods and procedures relating to radiation which are demonstrated to be safe; and (2) maintaining exposure to sources of radiation in amounts as low as reasonably achievable by means of good radiation protection planning, practice and enforcement.”

To accomplish these purposes, as stated in A.R.S. §30-654, the duties of the Agency are as follows:

- a. Regulate the use, storage and disposal of sources of radiation.
- b. Establish procedures for purposes of selecting any proposed permanent disposal site in Arizona.
- c. Assume primary responsibility for and provide necessary technical assistance to handle any incidents, accidents and emergencies involving radiation.
- d. Coordinate with the Department of Transportation and the Corporation Commission in regulating the Transportation of sources of Radiation.
- e. Adopt rules as necessary to accomplish the purposes of this Act.
- f. Adopt radiation protection standards consistent with those of the U.S. Nuclear Regulatory Commission or the U.S. Public Health Service.
- g. Adopt rules for personnel monitoring.
- h. Adopt a uniform system of labels, signs and symbols.
- i. By rule require training and experience of persons utilizing sources of radiation.
- j. Adopt standards for the storage and for the security against unauthorized removal of sources of radiation.
- k. Adopt standards for the disposal of radioactive material into the air, water and sewers and burial in the soil consistent with the U.S. Nuclear Regulatory Commission.
- l. Adopt rules for the shipment of radioactive materials conforming with those of the U.S. Nuclear Regulatory Commission and the U.S. Department of Transportation, the U.S. Treasury Department and the U.S. Postal Service.
- m. In individual case impose additional requirements to protect the public health and safety or grant exemptions which will not jeopardize the public health and safety.
- n. Make an annual report.
- o. Conduct environmental monitoring around fixed nuclear related facilities.
- p. Develop and use information resources relating to radiation.
- q. Prescribe by rule a schedule of fees to cover a significant portion of the costs.
- r. Adopt rules establishing radiological standards, personnel standards and quality assurance programs for screening and diagnostic mammography.

2. The effectiveness with which the agency has met its objective and purpose and the

efficiency with which it has operated.

Response. Our estimates of how well we have achieved the purposes of the Agency using the list from 1. above.

- a. Regulate the use, storage and disposal of sources of radiation.
X-Ray Facilities, 70%; Radioactive Material Facilities, 95% and Non-ionizing Radiation Facilities, 60%.
- b. Establish procedures for purposes of selecting any proposed permanent disposal site in Arizona.
No realistic activity has occurred, however, present regulations could accomplish most of the needs. 10%
- c. Assume primary responsibility for and provide necessary technical assistance to handle any incidents, accidents and emergencies involving radiation.
In real events we have never had a problem in doing this. 100%
- d. Coordinate with the Department of Transportation and the Corporation Commission in regulating the Transportation of sources of Radiation.
When we have an issue we consult with these agencies. 95%
- e. Adopt rules as necessary to accomplish the purposes of this Act.
We have tried to adopt rules as recommended by the U.S. Nuclear Regulatory Commission, however the Arizona process requires reworking the regulations and we have had delays. 85%
- f. Adopt radiation protection standards consistent with those of the U.S. Nuclear Regulatory Commission or the U.S. Public Health Service.
We have tried to adopt rules as recommended by the U.S. Nuclear Regulatory Commission, however the Arizona process requires reworking the regulations and we have had delays. 85%
- g. Adopt rules for personnel monitoring.
We have such rules in place. 100%
- h. Adopt a uniform system of labels, signs and symbols.
We have such rules in place. 100%
- i. By rule require training and experience of persons utilizing sources of radiation.
We have some of the U.S. Nuclear Regulatory Commission recommendations addressed. 70%
- j. Adopt standards for the storage and for the security against unauthorized removal of sources of radiation.
We have adopted almost all of the safety regulations but we are awaiting the development of some of the security regulation by the U.S. Nuclear Regulatory Commission. 80%
- k. Adopt standards for the disposal of radioactive material into the air, water and sewers and burial in the soil consistent with the U.S. Nuclear Regulatory Commission.
While existing rules would require most of what is required in 10CFR61 for a disposal site, we do not have the specificity of those regulations. 60%
- l. Adopt rules for the shipment of radioactive materials conforming with those of the U.S. Nuclear Regulatory Commission and the U.S. Department of

Transportation, the U.S. Treasury Department and the U.S. Postal Service.

We have adopted transportation regulation conforming with the U.S. Nuclear Regulatory Commission and the U.S. Department of Transportation, which covers 95% of the transportation. We have not adopted other regulations since they would be a duplication of existing enforcement activity. 95%

- m. In individual cases, impose additional requirements to protect the public health and safety or grant exemptions which will not jeopardize the public health and safety.
We utilize this section daily. It provides the necessary flexibility to quickly authorize new and innovative usages. 100%
- n. Make an annual report.
We have made our reports. 100%
- o. Conduct environmental monitoring around fixed nuclear related facilities.
We monitor around Palo Verde Nuclear Generating station. We suspended monitoring across the state when funding was reduced. This included monitoring fallout from Nevada Test Site. 70%
- p. Develop and use information resources relating to radiation.
We participate in the development of information to help applicants, emergency response, and for new uses of radiation. 80%
- q. Prescribe by rule a schedule of fees to cover a significant portion of the costs.
Our fees which are considerably less than the U.S. Nuclear Regulatory Commission, recover about 70% of our costs. 70%
- r. Adopt rules establishing radiological standards, personnel standards and quality assurance programs for screening and diagnostic mammography.
We have adopted the necessary rules. 95%

3. The extent to which the agency has operated within the public interest.

Response. If we use the criteria provided in 1. and 2. above we average 77%. The Agency has assessed civil penalties against 24 registrant or licensees in the past 3 years, none of which appealed the assessment. If we are judged by how well we are protecting the public from excess radiation exposure

4. The extent to which rules adopted by the agency are consistent with the legislative mandate.

Response. Both the Agency and the Governor's Regulatory Review Council review our regulations to assure that they are in accord with the legislative mandate.

5. The extent to which the agency has encouraged input from the public before adopting its rules and the extent to which it has informed the public as to its actions and their expected impact on the public.

Response. We routinely contact groups who have expressed interest in our rulemakings. We have occasionally put out press information regarding our rulemakings. We have

held repeated public hearing and meetings to get input while we are adopting rules. We have suspended rulemaking when it became clear that we needed a new approach.

6. **The extent to which the agency has been able to investigate and resolve complaints that are within its jurisdiction.**

Response. We have been able to investigate all such complaints. Several times we are not the Agency with jurisdiction and we have assisted the complainant in reaching the Agency with jurisdiction.

7. **The extent to which the Attorney General or any other applicable agency of state government has the authority to prosecute actions under the enabling legislation.**

Response. According to A.R.S. §30-685, the Attorney General has authority to make application to the appropriate court for an order prohibiting an act that violates Agency statutes, rule or regulations. Additionally, the Agency has specific statutory authority to assess civil penalties, impound radiation sources and modify, suspend or revoke licenses. A.R.S. §30-687.A. requires the Attorney General to bring actions for collecting civil penalties. In addition A.R.S. §13-602.E. designate violations of the law as a petty offence.

8. **The extent to which the agency has addressed deficiencies in its enabling statutes that prevent it from fulfilling its statutory mandate.**

Response. The Agency cannot order a person to clean up an area that he contaminated and endangers the public health and believes this is a potential weakness in Arizona Law. The Council of State Governments Suggested State Legislation for radiation control programs recommends that states possess this authority. At present the Governor can only order the state to clean up a contaminated area, not the person who caused the public health problem. Proposed legislation to correct the deficiency was rejected by the Legislature. Should the problem occur, we suggest a Civil action may be a way to recover public moneys.

9. **The extent to which changes are necessary in the laws of the agency to adequately comply with these factors.**

Response. As identified in the December 1995 Sunset report, the inability of the State to order a person to clean up an area that he contaminated, is one possible change. The other possible change was considered by the Appropriation Committee in 2003 and they elected not to require an increase in license and registration fees to totally fund the Agency.

10. **The extent to which the termination of the agency would significantly harm the public health, safety or welfare.**

Response. If the Agency is terminated, the following functions would be lost to the State of Arizona;

- The regulation of radioactive material. The U.S. Nuclear Regulatory Commission would reassert federal authority which would result in at least a 5 fold increase in

licensing costs to users of these materials. For example, The University of Arizona annual license fees would go from \$2,600.00 per year to \$14,700.00 per year and St. Joseph's Hospital annual license fees would go from \$1,650.00 to \$27,300.00. Further, if the U.S. Nuclear Regulatory Commission reasserted its authority, the State would no longer have any decision voice in the location of a low level radioactive waste site should someone file an application.

- The regulation of x-ray facilities. There is no federal program to regulate the use of x-ray facilities except for mammography units. The inspections of the mammography units would shift to FDA field offices. Questions about the program would be answered in San Francisco or Washington. Based upon what was occurring prior to there being a regulatory program in Arizona, it would appear that over a 5 - 10 year period 25% of the equipment would fail to meet basic health and safety standards.
- The regulation of non-ionizing radiation sources. As with x-ray, there is no federal program to inspect as assure the public health and safety of the end user of this equipment. The FDA regulates the manufacture of this equipment. Based upon the injuries which occurred prior to the Agency applying regulations, significant injuries could occur.
- Emergency response for the state. The state would not have a health physics capacity to evaluate incident and accidents involving radioactive materials. This would include responding to transportation events, nuclear power plant events and weapons of mass destruction utilizing radioactive materials. Within 4 -12 hours of an event, the federal government will provide health physics support on scene, prior to that time, the only support will be by telephone. Currently, health physics support is available in Phoenix and is available through out the State. As presently constituted, the Agency provides immediate radiation expertise to the Governor and to the Legislature without filtering through non-radiation experts.

In short, the termination of the Agency could have significant harmful effects to the public health safety and security. Further, there would be significant increases in annual license fees for radioactive material licensees.

11. The extent to which the level of regulation exercised by the agency is appropriate **and whether less or more stringent levels of regulation would be appropriate.**

Response. The Agency tries to ensure that appropriate regulation is applied. Two examples will illustrate how we try to balance our regulatory program. 1) We researched the literature and found that there we no indications of injury to personnel by the radiation from MRI units used in medicine. Based upon that we proposed to end our regulatory program and did so after receiving public comments on our proposal. 2) When considering the amount of supervision by a licensed practitioner when medically utilizing lasers, we determined that the same level of supervision is not required for all applications and we adopted regulations that reflect that judgment. This occurred after three hearings on this issue.

The Agency has a graduated enforcement program. The violations that are repeated, require a civil penalty as well as those violations which have led to a exposure beyond the regulatory limits. As a result of this policy the Agency has few licensees or registrants who repeat violations.

It should be noted that the Agency has a significant backlog of x-ray inspections overdue and a lesser number of radioactive material and non-ionizing inspections overdue. The Agency reduced the percentage of overdue x-ray inspections to 4% in FY 2000. Budget cuts in subsequent years cause several trained staff to leave and reduced available inspection staff. For example, the x-ray non-mammography inspection staff was reduced from 5 in 2001 to 2 this year plus 1 in training. The number of x-ray tubes increased from 10,010 to 12,283. Presently, the Agency is 39% overdue for x-ray inspections.

12. The extent to which the agency has uses private contractors in the performance of its duties and how effective use of private contractors could be accomplished.

Response. The Agency does not use private contractors in the performance of its primary duties. Even though several states employ private contractors to perform inspections of registrants, the Agency believes that privatizing the inspection function would not reduce costs to the State for administering the program and would likely lead to higher costs for the regulated community. As reported by the Auditor General in response to this question during the last sunset review, Colorado, which has privatized inspections, has reported that privatization has proven costlier for registrants, requires significant staff expertise to review reports and monitor contractors, and has been difficult to implement. Colorado also reports that privatization requires a sophisticated tracking system to ensure timely inspections and information flow between the state, contractors and registrants.

The Agency does contract out for the analysis of its employees' film badges, emergency workers personnel dosimeters, which are used to assess the radiation exposures of individual who work near radiation sources. The Agency also contracts for instrument calibration, specialized employee training and radiation source disposal.

Additional issues to be addressed.

1. An identification of the problem or needs that the agency is intended to address.

Response. To accomplish the purposes of the Agency, inspections should be accomplished in a timely manner. The restrictions on resources has made it mathematically impossible to meet these requirements.

2 A statement, to the extent practicable, in quantitative and qualitative terms, of the objectives of such agency and its anticipated accomplishments.

Response. With 12,283 x-ray tubes registered, the agency must make approximately 4,000 non-mammography x-ray tube inspections per year to maintain inspection frequency. With the number of non-mammography x-ray inspectors presently funded for

the Agency we cannot expect to do more than 2,000 x-ray tube inspections per year. If we have to train a new inspector, we will be able to inspect 1,100 tubes per year. We inspect all mammography x-ray tubes each year as required by A.R.S. §30-683 C.

3. **An identification of any other agencies having similar, conflicting or duplicate objectives, and an explanation of the manner in which the agency avoids duplication or conflict with other such agencies.**

Response. We are aware of no other agency having the same or shared jurisdiction for the regulation of sources of radiation. There is a sharing of jurisdiction regarding transportation of radioactive materials and Arizona Law provides for the appropriate coordination to prevent conflicts.

4. **An assessment of the consequences of eliminating the agency or of consolidating it with another agency.**

Response. As detailed in 10. above, the termination of the Agency will have significant effects in Arizona. The consolidation of the Agency into another Agency will also have adverse effects. At present, if a significant event occurs, the Governor is immediately advised by a radiation expert. In addition, the Legislature is advised by qualified experts regarding potential policy issues, for example large shipments of radioactive material across Arizona. It is difficult to estimate the value of being able to access information from an expert that is unfiltered by untrained management of a department. Further, resources you may want to go specifically to the program is subject to diversion in the accounting process.

The Agency has a well respected radiochemical laboratory at present. The division or consolidation, may well compromise the ability of the laboratory to maintain the present level of competence.

Even worse, would be the division of the Agency into several parts. In times of emergency, no single part has the resources to address all the issues. When you try to recombine the parts you may well find they have not trained on this type problem and you no longer have a cadre of trained experts. There will also be the issue of who has the authority to require staff to train on issues they do not see as under their jurisdiction.

And for all of these consolidation methods, there is a significant likelihood that the U.S. Nuclear Regulatory Commission will take the Agreement back and the State will be less likely to have an adequate staffing. Further, the Palo Verde Nuclear Generating Station license may be compromised if the State cannot adequately respond to emergencies at the plant.

RADIATION REGULATORY HEARING BOARD RESPONSE TO THE COMMITTEE OF REFERENCE

1. The objective and purpose in establishing the agency.

Response. According to A.R.S. §30-653 the Radiation Regulatory Hearing Board was established in 1980 as a part of the act that also established the Arizona Radiation Regulatory Agency (ARRA). The Hearing Board provides a vehicle for appeal by any person adversely affected by an order of the ARRA or its Director. The Hearing Board also reviews and approves rules and significant policies of the ARRA. In addition, the Hearing Board may also review and make recommendations to the ARRA, the Governor and the Legislature.

2. The effectiveness with which the agency has met its objective and purpose and the efficiency with which it has operated.

Response. The Hearing Board has met 5 times in the last three Fiscal Years. All of these meetings were to receive and review public comments offered for proposed rule changes. The Hearing Board has met a total of twelve times since FY1996 and all the meetings were for rulemakings or significant policy adoption. No one has appealed any of the Director's imposed civil penalties during this period.

3. The extent to which the agency has operated within the public interest.

Response. The Hearing Board serves the public interest in providing an appellate review of ARRA enforcement actions. In addition, the Hearing Board provides a forum for public input to the ARRA rulemakings.

4. The extent to which rules adopted by the agency are consistent with the legislative mandate.

Response. The Hearing Board reviews the ARRA proposed rulemakings and takes public comments to assure that the final rules are within the legislative mandate to the Agency.

5. The extent to which the agency has encouraged input from the public before adopting its rules and the extent to which it has informed the public as to its actions and their expected impact on the public.

Response. The Hearing Board actively seeks public input to the ARRA rulemakings. The Hearing Board has sent proposed rule back for additional public comment when the proposal was deemed inadequate or needing additional information.

6. The extent to which the agency has been able to investigate and resolve complaints that are within its jurisdiction.

Response. The Hearing Board does not receive complaints from consumers.

7. The extent to which the Attorney General or any other applicable agency of state government has the authority to prosecute actions under the enabling legislation.

Response. The Hearing Board has no enforcement authority.

8. **The extent to which the agency has addressed deficiencies in its enabling statutes that prevent it from fulfilling its statutory mandate.**

Response. The Hearing Board has not proposed any changes to its enabling statutes.

9. **The extent to which changes are necessary in the laws of the agency to adequately comply with these factors.**

Response. We did not identify any changes that are needed in the Hearing Board's enabling legislation to adequately comply with the Sunset Factors.

10. **The extent to which the termination of the agency would significantly harm the public health, safety or welfare.**

Response. Terminating the Hearing Board would not harm the public health, safety or welfare. However, the Hearing Board appear to provide a check and balance on the actions of the Agency and provides a timely, less expensive alternative to court actions.

11. **The extent to which the level of regulation exercised by the agency is appropriate and whether less or more stringent levels of regulation would be appropriate.**

Response. The Hearing Board in its review of the rulemaking of ARRA, does balance the level of regulation needed to accomplish the protection of the public without over regulation of the industry.

12. **The extent to which the agency has uses private contractors in the performance of its duties and how effective use of private contractors could be accomplished.**

Response. The Hearing Board does not utilize any service that can be privatized, except the court transcriber of its hearings.

Additional issues to be addressed.

1. **An identification of the problem or needs that the agency is intended to address.**

Response. See number 1. above and the response in the "Arizona Radiation Regulatory Agency Response to the Committee of Reference."

2. **A statement, to the extent practicable, in quantitative and qualitative terms, of the objectives of such agency and its anticipated accomplishments.**

Response. See number 2., 3., and 4. above.

3. **An identification of any other agencies having similar, conflicting or duplicate objectives, and an explanation of the manner in which the agency avoids duplication or conflict with other such agencies.**

Response. None have been identified.

4. **An assessment of the consequences of eliminating the agency or of consolidating it with another agency.**

Response. There will be one less level of appeal for the public. This level of appeal is apparently to assure that all scientific factors are considered by technical individuals. See also the responses in the "Arizona Radiation Regulatory Agency Response to the Committee of Reference."

**ARIZONA RADIATION REGULATORY
AGENCY**

ANNUAL REPORT FY2005

**FY2005 ANNUAL REPORT
ARIZONA RADIATION REGULATORY AGENCY**

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HIGHLIGHTS OF FY2005

During calendar year 2004, shippers reported that 13,700,000 Curies of radioactive materials in the form of either Large Quantity Radioactive Material shipments or Highway Route Controlled Quantity shipments which were shipped across Arizona. All but 15,000 Curies were transported on I-40. The appropriate legislative committees and Governor's Office were notified about the general information of each shipment. In addition, law enforcement agencies were notified of the details of each shipment. The carriers of such shipments were required to periodically notify the Arizona Terrorism Intelligence Center while the shipments were in state. Please note these statistics do not include any data for shipments smaller than the Large Quantity Radioactive Material or Highway Route Controlled Quantity shipments. Virtually all of the shipments were Cobalt 60 to be utilized in the irradiation of products.

The Agency conducted several training classes for first responders. In case of an accident involving radioactive materials or a weapon of mass destruction, the first responders need to have access to information regarding the presence and quantity of radiation. These classes provide the necessary training for these individuals and the confidence to utilize the instrumentation provided. The Agency is purchasing equipment for use in the event of a weapon of mass destruction involving radioactive material. These devices are usually referred to as a radioactive material dispersion device or RDD. The Agency has also participated in exercises with the Phoenix Bomb Squad of the Phoenix Police Department.

In the event of a weapon of mass destruction attack in Arizona utilizing a radioactive material dispersion device the Agency is prepared to advise the Governor and other elected officials of the projected consequences. We estimate that if only one event occurs within the United States, we will have federal support within 4 to 8 hours. If multiple events occur within the United States, then federal support may be delayed by 12 to 48 hours arriving. Until federal support arrives all radiological technical assessment will be made by the Agency.

In August of 2004, the Agency responded to a reported leakage of a U.S. Department of Energy shipment. The shipment originated at the U.S. Department of Energy facility in Paducah, KY and consisted of waste material bound for the Nevada Test Site for disposal. On arriving on the scene, our representative determined, that while material was leaking out of the shipping container, none of the leaked material was radioactive. Several questions did arise regarding the adequacy of the shipping containers. We were informed that 3 of 5 containers were leaking in this series of shipments. As a result of inquiries by the Governor, the U.S. Department of Energy suspended the remaining shipments pending an investigation. The investigation was completed in June and the shipments were expected to resume in July with improved containers and packaging protocols.

As a result of concerns expressed by citizens in Mohave County regarding the fallout from the Nuclear Weapons testing in the 1950s and 1960s, the Agency Director conducted a public hearing. The Director's report of the hearing indicates that while some 50 persons testified as to their personal suffering they were unable to specifically state the any given case was in fact caused by the radiation exposure. Equally clear is, the Federal Government is paying compensation to persons in other areas of the state which were exposed even less than the

citizens in Mohave County. The Director recommended to Governor Napolitano and the National Academy of Science Committee that as a matter of simple equity, all of Mohave County should be receiving such payments. The citizens were also quite concerned that the United States may begin testing again, perhaps even secretly. At one time the Agency conducted monitoring through out the State which would detect any unreported leaks of significance, but the program had to be suspended due to budgetary constraints in 2002.

X-RAY COMPLIANCE PROGRAM

Fiscal Year 2005

The X-ray Program is responsible for the registration and inspection of machine produced radiation sources. Personnel are also available to interact with registrants and the public on issues of radiation safety.

COMPLIANCE

Activity in the Program continues to increase. The number of facilities grew from 4501 Registrants in FY 2004 to the FY 2005 total of 4677 Registrants, a 3.9% increase. Concurrently, the number of machines increased from 11028 to 11673, a 5.8% increase and the number of tubes increased from 11683 to 12281, a 5.1% increase.

624 Facility Inspections were completed representing 13.3% of all registered facilities. These inspections resulted in 101 violations occurring in 75 facilities. We inspected 1480 x-ray tubes during FY 2005. We ended FY 2005 with 39.3 % of the facilities overdue for inspection compared to 22.49 % overdue at the end of FY 2004. The overdue inspections can be directly attributed to a reduction in the number of available, funded inspector positions.

X-ray Program Rules require that those personnel applying radiation to humans be either licensed by the Medical Radiologic Technology Board of Examiners (MRTBE) or exempt from the rules. There were 6 registrant MRTBE violations during FY 2005, which was less than the 17 violations in FY 2004. These violations do not include those issued by MRTBE. The decrease in violations can be attributed to an increase in the MRTBE Investigator activity and a reduction in the number of hospital and medical facilities inspected.

Numerous registration actions occurred during the year as facilities were bought, sold, traded, merged and incorporated. These changes included replacement, modifications, additions and deletions to radiation equipment inventories. There were 1801 documented record changes to our database this fiscal year compared to 2212 changes in FY 2004.

Again, higher than usual personnel turnover was experienced during the year, which resulted in filling 2 positions. At the end of the fiscal year, there were two unfunded positions. A budgetary crisis during FY 2003 subsequently resulted in our loss of funding for two inspector positions.

MAMMOGRAPHY QUALITY STANDARDS ACT (MQSA)

In 1994 the Agency entered into an agreement with the Food and Drug Administration (FDA) to administer the MQSA Program for the State of Arizona. This Program requires an annual inspection of all state mammography facilities. Such an inspection consists of a comprehensive review of the facilities' mammographic diagnostic capabilities including the qualifications of

physicians, technologists and medical physicists; proper machine operation, development of film, reporting of results, and medical audit of positive results.

The Agency has developed and implemented rules for state mammography facilities that either coincide with the interim MQSA Law or provide for more specific rules applicable to the needs of Arizona. As a result, a state inspection is also performed at the time of the MQSA inspection. Substantial changes in state mammography regulations to comply with the final MQSA Regulations of April 29, 1999, were made during the 5 year rule review and have been submitted to the Governor's Regulatory Review Board.

During FY 2005, 140 facilities were inspected for the FDA and the state. Several facilities were inspected more than once since their scheduled annual inspection rotation occurred twice during the fiscal year. In retrospect, the State Inspection Program has improved the quality of Mammography in Arizona as demonstrated by a gradual reduction in the number of violations as the program has progressed. Specifically, the MQSA facility non-compliance rate has dropped from 42% initially, to a rate of 15.9% at the end of FY 1999. MQSA violations increased to 40 % during fiscal 2000 due to new facility startups and final FDA/MQSA Regulation requirements. State inspections during FY 2005 resulted in a noncompliance rate of 2.9%, a decrease in the rate of 3.1% in FY 2004.

At present, the Agency has two State Health Physicist assigned to mammography inspection duties. Future plans include training of an additional inspector to provide coverage for expanded activities and personnel backup.

The FDA continues to encourage voluntary compliance as the primary goal of the MQSA Program. The standards can be met with the continuous and diligent application of quality control procedures. Improved diagnostic images and accurate mammographic film interpretation will result in earlier detection of breast cancer prompting appropriate, life-saving, medical attention.

COMPUTERIZED TOMOGRAPHY PROGRAM

During FY 2002 new rules were adopted which require those facilities with medical CT X-ray Units to have their machine checked annually by a "qualified expert." The testing, as outlined in the rules, involves checking CT machines for patient dose levels, table alignment, image resolution and establishing quality control standard procedures. There are 177 CT facilities in Arizona, an increase of 41.6 % over the 2004 total of 125. The CT facilities have demonstrated compliance with the new rules for annual health physicist equipment review, providing the patients with an additional measure of radiation safety.

We continued to be challenged by facilities that wished to do "walk-in" patients or what we call screening. Rules allow a screening radiographic procedure only for mammography facilities. The CT facilities are required to perform their studies, as are other medical facilities, based upon an order from an Arizona licensed physician.

The regulatory and medical communities continue to debate the efficacy of “screening type CT studies.” While this discussion continues, the public is encouraged through advertisements to seek out the CT Procedures that they think are appropriate for their personal health care.

The medical community introduced the new Pet/CT Combination Unit for diagnosing various active disease processes, now referred to as Fusion Imaging. This temporarily created an issue of technologist operator certification for us since nuclear medicine and x-ray were being used together.

INDUSTRIAL RADIOGRAPHY

Revisions in rules affected the radiographer community in Arizona by requiring a certification of the radiation safety officer through testing. The American Society for Nondestructive Testing was selected as the administrator for the examination. The Agency has proctored the examination for radiographers several times during FY 2003. We are satisfied that this certification process will improve the industrial radiography safety practices in Arizona.

FUTURE RESOLVE

Plans for FY 2006 are to maintain the overall number of inspections performed at a high level consistent with efficient output. Newly hired State Health Physicists will continue their training either at special off-site sessions or through in-service education within the Agency. We plan to request additional clerical help to more efficiently respond to inquiries, to improve record keeping and to shorten correspondence and registration application turn around time.

X-RAY COMPLIANCE STATISTICS
Fy2005 Annual Report

Category of Registrant	Tubes Registered (%)	Tubes Inspected (%)	Facilities Non-Comp. (%)
Chiropractic	792 (6.45)	87 (10.98)	10 (11.49)
Dental	7,189 (58.54)	921 (12.81)	29 (11.11)
Educational	154 (1.25)	2 (1.30)	0 (0.00)
Hospital	1,252 (10.19)	39 (3.12)	3 (75.00)
Industrial	446 (3.63)	25 (5.61)	4 (33.33)
Medical	1,510 (12.30)	106 (7.02)	13 (20.63)
Mammography	265 (2.16)	214 (80.75)	4 (3.10)
Podiatry	133 (1.08)	12 (9.02)	3 (25.00)
Veterinary	540 (4.40)	62 (11.48)	9 (19.15)
Totals	12,281	1,468 (11.95)	75 (12.18)

RADIATION MEASUREMENTS LABORATORY

Radiation Measurements Laboratory (RML) activities during Fiscal Year 2005 included the following: Palo Verde Nuclear Generating Station (PVNGS) off-site radiological monitoring; participation in emergency response drills at PVNGS requiring analytical analyses; limited statewide environmental radiation monitoring; the Arizona Radon Project; and drinking water analysis support to the Arizona Department of Environmental Quality (ADEQ).

The RML has continued to perform radiological monitoring in accordance with the Palo Verde Nuclear Generating Station (PVNGS) Off-site Emergency Response Plan. This includes sampling and analysis of air, water, soil, milk, vegetation, and fruit as well as the use of thermoluminescent dosimeters (TLDs) to measure low-level ambient radiation. Resources include a mobile laboratory for field sample analyses. Laboratory analysis results reveal no increase in environmental background radiation levels in the vicinity of PVNGS.

Due to budgetary constraints, the RML had to suspend monitoring other locations within the state. The RML has contracted with the ADEQ to perform radioactive analyses for special drinking water and aquifer studies in the state. Laboratory analyses results reveal some waters to contain high levels of the naturally occurring radionuclides such as uranium and radium as established by the Safe Drinking Water Act. Continued monitoring is necessary in assuring future safe levels of radiation in Arizona's drinking water and represents one of the essential components of the Agency's operations.

RADIOACTIVE MATERIAL/NON-IONIZING RADIATION

Annual Report FY 2005

RADIOACTIVE MATERIAL RADIATION COMPLIANCE

The Radioactive Materials (RAM) Program is still struggling to adjust and adapt to the changing needs of the Federal Government and the State of Arizona. The RAM Program, at this time, still retains four FTE's and when filled, fulfills the varying duties plus their normal inspection and compliance duties. One of the RAM positions spends most of their time drafting and publishing new and amended rules that govern the way that the Agency conducts its licensing, registration and inspection duties for the users of radioactive material and devices within the state. Additionally, this person is also responsible for conducting administrative duties with regard to RAM licensing, amendments and terminations. One of the RAM positions is tasked with the duty of keeping up with the posting and entering of Sealed Source and Device (SS&D) changes which are published by the United States Nuclear Regulatory Commission (USNRC). Additionally, one person is responsible for maintaining a log of the Therapeutic and Diagnostic Misadministration list. And finally, the fourth RAM member is responsible for the maintenance of the out-of-state licensee's which use RAM within the state while performing work in Arizona under Reciprocity.

Personnel shortage problems continue to plague the RAM program. The newly acquired RAM inspector, hired in November 2003, sent to the USNRC five week course in September 2004 and trained by the existing RAM inspectors, was lost to ASU in March of 2005. Fortunately, an X-Ray inspector trained at the same USNRC five week course in September, 2004, was recruited to fill the position. However, this person had to attend NEXT training on CT scanning X-Ray devices and has to perform a number of inspections within the state on these devices. Additionally, the individual has to be trained to perform RAM inspections. This Program has been continually tasked with the need to train new personnel in the performance of their duties which has caused the Program to fall further behind in the performance of RAM inspections.

This is further complicated by the fact that a vacant RAM position can not be filled due to budget constraints. This continues to have a deleterious effect on the ability of RAM to keep up with its schedule of required RAM inspections.

The continued non-availability of funding by the USNRC and the State of Arizona for the training and maintenance of inspector expertise has impacted greatly in the ability of ARRA inspection personnel to maintain currency with the fast changing regulatory requirements.

NON-IONIZING RADIATION

Arizona's regulatory authority to control sources of non-ionizing radiation stems from the Title 30, Chapter 4 sections authorizing other aspects of the program. The regulations controlling sources of non-ionizing radiation are found at Title 12, Chapter 1, Article 14 of the Arizona Administrative Code. The sources specifically covered by regulation include laser sources, radio frequency (RF) sources, and sources of ultraviolet radiation produced by electronic devices. The

statutory authority and the regulatory framework appropriately cover these sources and will help to assure Arizona residents of protection from unnecessary and hazardous exposures.

The number of nonionizing radiation registrants continues to increase annually. We have a current total of seven hundred thirty six registrants as of July 1, 2005. The total number of current registrants represents an overall increase of ninety-six new registrants. With the largest number being medical laser users. Approximately 17 percent of the registrants were inspected during the year.

The nonionizing radiation protection program has one FTE authorized. The program growth requires that efforts be placed on significant issues and projects. Maintenance of a satisfactory non-ionizing radiation program will require additional staffing. Additional time has been utilized in support of the Radioactive Materials Program due to staffing shortages within the NRC mandated program. Laser use in the human arena evolves daily with new procedures and laser/light source equipment being developed. Significant increases in cosmetics/aesthetics for hair removal and skin rejuvenation are being observed.

Title 12, Chapter 1, Article 14 of the Arizona Administrative Code has finally been approved and is now in effect. The rule changes appear to have been accepted, with much activity in bringing the registrants into compliance. An inordinate amount of time has been devoted to the Cosmetic/Hair Removal issues during the year. This area of laser use is evolving faster than any other aspect of non-ionizing radiation use and has the potential for significant impact on the general public.

**FY 2005
Licensing Statistics
Radioactive Materials Licensing and Inspection Program**

Licenses (Total Number)	379
Medical (Types A, B, C, Broad and Tele)	156
General Medical	15
Industrial (Types A, B, C, Limited, Portable, and Fixed Gauges)	135
Industrial Radiography (Fixed and Mobile)	6
Academic (Broad and Limited)	5
Miscellaneous Licenses	62
* Number of Particle Accelerator's	55
** Number of High Dose Rate Brachytherapy's (Included in the Licensed Facility)	8
New Licenses and Renewals	90
New Particle Accelerator Registration and Renewals	33
Inspections Performed	110
Licensing Actions (Amendments and Terminations)	349
*** Reciprocity (Inspections)	2
(Licensee's)	35

* As of January 1996, the RAM Program assumed the responsibility for the inspection and registration of Particle Accelerators (PA's). Management of these radiation users was transferred to RAM from the X-RAY Program.

** Not included in the overall Licensee total.

*** Reciprocity is Arizona's recognition of an out-of-state licensee's Specific License for the use of radioactive materials within the State of Arizona. A General License is issued for this purpose.

NON-Ionizing Radiation Statistics

Registration Type	# Inspected FY-2005	# Registrations FY-2005
Tanning Facilities	49	289
Medical Laser Facilities	26	318
Industrial Laser Facilities	4	80
Laser Light Shows	9	51
Radio Frequency Facilities	3	24
Power Line Surveys	00	
Other, include Radioactive Material	31	
Total inspections	122	Total Registrations 736
New Registrants	135	
Registrant Terminations	39	
Total Registrant Actions	299	

EMERGENCY RESPONSE PROGRAM ANNUAL REPORT – FY 05

GENERAL

The Emergency Response Program (ER) is involved in and responds to radioactive materials (RAM) incidents. This includes preparation for and participation in offsite response to any incident occurring at the Palo Verde Nuclear Generating Station (PVNGS); the transportation of transuranics to the Waste Isolation Pilot Plant (WIPP), and on-scene response to hazardous materials incidents statewide in which RAM is involved. Training is also provided to organizations that respond initially to hazardous materials incidents around the state: police, fire, medical and emergency service personnel. The ER Program also tracks, and provides assistance in inspections of special radioactive materials shipments that travel across Arizona Interstate Highways.

PLANNING

As part of the radiation emergency response planning effort, the program requested and was granted U.S. Department of Home Land Security funds. The funds have allowed the program to acquire critical radiation monitoring equipment that will be essential to the response effort should a radiological incident occur in the state. The program will continue to strive for improvement in our planning efforts to meeting our state and national priorities of preventing and responding to any radiological emergency.

TRAINING

Training this fiscal year involved conducting two four-day training sessions in response to the Palo Verde Nuclear Generating Station (PVNGS). Several monitor pool refresher classes and participation in a full-scale Plume Exposure Drill. The Program conducted a large number of training sessions for hazardous materials first responders covering both “standard” response and if necessary, response to a “Dirty Bomb” –Explosives with Radioactive Materials used by terrorists. It is the Program’s goal to continue to train, assist and respond to any and all radiological incidents within our State.

WASTE ISOLATION PILOT PLANT

The Waste Isolation Pilot Plant (WIPP) in southern New Mexico has been open for several years and has been receiving transuranic waste. The first shipment of transuranics to the WIPP occurred along Arizona I-40 in January 2004. However, the waste scheduled to transit Arizona will be from the Nevada Test Site and Lawrence Livermore National Laboratory and is characterized as contact handled, meaning that radiation dose rate outside the containers is very low. The Program’s Emergency Response Coordinator for radioactive waste activities has been extremely active in reviewing and streamlining WIPP-related training programs primarily for

first responders, but also for medical personnel and hospitals. Coordination and outreach activities with affected state agencies, e.g., Emergency Management, Transportation and Public Safety, and with the five counties through which I-40 passes – Mohave, Yavapai, Coconino, Navajo, and Apache – for medical and first responder training have been major functions of this position during the past several years. Principal activities for first responders included equipment issue, e.g., survey instrument kits to units not receiving them in FY 2004 including instrument training; binoculars, instrument exchange for calibration; and personal protective equipment. WIPP briefings were also conducted and several meetings involving the affected states were held to assure continued safety.

INCIDENTS

During this fiscal year, ER and the Agency responded to 13 incidents involving radioactive materials. Several incidents involved moisture/density gauges that were stolen or involved in accidents; others involved radioactive scrap that were detected at the entrance of their facility and reported to the agency. The most noted incident/response was a Department of Energy shipment of Uranium Tetrafluoride (UF₄) that appeared to be leaking material en route to the uranium disposal site in Nevada. The incident response and investigation concluded no radioactive material had leaked from the shipment package. Governor Napolitano was deeply concerned about the incident and sent a letter to DOE requesting an appropriate investigation of the shipping program for this campaign. The Governor also was concerned as to what steps are being taken to improve the integrity of radioactive shipment across the State of Arizona.

The Agency has continued the program of placing civil defense monitoring instruments with response organizations that want them. This year, ER calibrated 45 survey instruments, 200 dosimeters, and exchanged/distributed 45 civil defense instrument sets to HAZMAT organizations.

RADIOACTIVE SHIPMENTS THROUGH ARIZONA

Fifty three highway route controlled quantity (HRCQ) shipments totaling 10.7 million curies of radioactive material crossed Arizona highways this fiscal year. Notifications were sent to DPS officers to alert them of these shipments in the case of they are involved in an accident or emergency.

COMMUNICATIONS

Communication is one of the most important aspects of emergency response planning as well as of the actual response. During this reporting period, there were 55 Nuclear Alert Net (NAN) drills and four telecommunications tests. The latter tests are those in which the entire communications system is checked.

COMMITMENT TO EXCELLENCE BY PROVIDING THE BEST POSSIBLE RESPONSE TO THE STATE OF ARIZONA.

Emergency Response Program is committed to providing the best possible response capability to the citizens of Arizona. The program will continue to work with our partners in the first responder community and provide highest quality of assistance to any radiological accident or incident in the state of Arizona.

Arizona Medical Radiologic Technology Board of Examiners 2004-2005 Annual Report

The Medical Radiologic Technology Board of Examiners (MRTBE) was established in 1977 after extensive study and review of documented statistics revealed that: (1) the major portion of the populations man-made radiation exposure in the United States is from the use of medical and dental x-ray producing equipment; and (2) of that portion, a significant amount is unnecessary because of the sub-optimal use of equipment by the operator. The preamble of the MRTBE law states:

“It is declared to be the policy of this State that the health and safety of the people of the state must be protected against the harmful effects of excessive and improper exposure to ionizing radiation. Such protection can, in some major measure, be accomplished by requiring adequate training and experience of persons operating ionizing radiation equipment under the direction of licensed practitioners. It is the purpose of this act to establish standards of education, training and experience and to require the examination and certification of operators of x-ray equipment.”

Arizona Revised Statutes §32-2801 et. sec., provide for a Board of Examiners consisting of ten members appointed by the Governor, and a statutory chairman who is the Director of the Arizona Radiation Regulatory Agency. The responsibilities of the Board include:

Assuring that applicants have met minimum standards of education and training.

Setting standards for, and granting approval to schools of radiologic technology.

Administering certification exams for technologists, special permit applicants and refresher exams for technologists who have not practiced for three years.

Conducting investigations to assure compliance with MRTBE statutes and rules.

Pursuing statutory remedies to resolve problems involving uncertified, non-exempt ionizing machine operators.

Interacting with national and state professional and certifying organizations for technologists.

Assuring optimum testing standards by contracting when necessary with national professional registries to administer certifying exams to qualified applicants.

MRTBE CERTIFICATES

Certification	Number of Active Certificates
<u>Radiologic Technologist</u>	5,824
<u>Therapy Radiologic Technologist</u>	453
<u>Nuclear Medicine Technologist</u>	462
<u>Mammography Radiologic Technologist</u>	998
<u>Practical Radiologic Technologist</u>	1,031
<u>Practical Radiologic Technologist Unlimited</u>	24
<u>Practical Radiologic Technologist Podiatry</u>	100
<u>Special Permit</u>	6
<u>TOTAL</u>	8,898

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