



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

June 20, 2018

Kiara Bean, Owner
17653 Albion Street
Detroit, Michigan 48234

SUBJECT: PROPERTY AT 11496 PORTLANCEN AVENUE – REQUEST FOR INITIAL SITE VISIT AND TO PERFORM RADIOLOGICAL SURVEYS

Dear Ms. Bean:

I am writing to inform you that our records indicate that your property at 11496 Portlance Avenue, Detroit, Michigan, was previously used by the Astro Instrument Inc., as an electrical repair shop for aircraft gauges and aircraft flight instruments. If you are not the current owner of the property, please let us know whom we should contact. Based on information provided by the State of Michigan, aircraft gauges and aircraft flight instruments previously repaired at the shop contained radium-226, a radioactive isotope that, in certain quantities, may pose a risk to public health and safety. Radium-226 was commonly used in World War II era aircraft instruments such as luminous radium dials and gauges. Radium-226 is regulated by the U.S. Nuclear Regulatory Commission (NRC). We do not know whether there is a current radiological issue at your property, and it is important that you contact us at your earliest convenience. We are requesting access to your property to perform radiological surveys and to collect samples to determine whether there is any residual contamination resulting from this historical manufacturing and repair on your property. This testing will not damage your property and these tests will be conducted at no cost to you. If residual contamination at your property has already been remediated, please provide us with records describing cleanup activities and the status of the remediation.

To successfully complete our surveys and sample collection, we need to schedule an initial site visit. The initial site visit will serve two purposes: 1) to determine whether there is any readily detectable radium contamination; and 2) to determine whether your site requires remediation to remove residual contamination. After the visit, we will share results with you as soon as they are available.

Should remediation be required, we will provide additional information on any actions that may be necessary to ensure protection of public health and safety. Please be aware that under the NRC's regulations, site owners are responsible for the costs associated with these remediation activities; as a regulatory agency, the NRC cannot provide funding. This does not, however, preclude site owners from using alternative legal options that may be available under state or federal law to fund remediation activities. We recognize that you may not have been aware of the historical radium repair at your site, and we will continue to work with you to address and resolve this matter.

The enclosed Site Summary Report provides all of the information that the NRC has concerning historical radium storage at your property, which was provided to us by the State of Michigan or

K. Bean

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found through a search of publicly available information. The enclosed Backgrounder provides more detail on the history of radium use and its potential health effects. The enclosed brochure provides an overview of the NRC.

In accordance with 10 CFR 2.390 of the NRC's "Agency Rules of Practice and Procedure," a copy of this letter will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records component of NRC's Agencywide Documents Access and Management System (ADAMS). ADAMS is accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html>.

We would like to work with you to schedule our initial site visit and answer any questions you might have. At your earliest convenience, please contact Mr. Stephen Koenick, Chief, Materials Decommissioning Branch, Division of Decommissioning, Uranium Recovery and Waste Programs, Office of Nuclear Materials Safety and Safeguards, at (301) 415-6631, or Mr. Jeffrey Whited, Project Manager, at (301) 415-4090.

Sincerely,

/RA/

John R. Tappert, Director
Division of Decommissioning, Uranium Recovery
and Waste Programs
Office of Nuclear Material Safety
and Safeguards

Docket No. 03039080

Enclosures:

1. Site Summary Report
2. Radium Backgrounder
3. U.S. Nuclear Regulatory Commission *Overview*

REGISTERED LETTER – RETURN RECEIPT REQUESTED

Astro Instrument Inc.: Site Summary

**Prepared by
Oak Ridge Associated Universities
Under NRC Contract Number HQ-50-17-A-0001**

March 23, 2018

**Prepared for
U.S. Nuclear Regulatory Commission**

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Astro Instrument Inc.: Site Summary

The following information was extracted from public records.

Address

Address 1: 11496 Portlance, Detroit, Michigan

Address 2: 11496 Portlance Avenue, Detroit, Michigan

Address 1 is noted in letters from the State of Michigan (NRC 2017). The street name was changed at some undetermined date from Portlance to Portlance Avenue.

Site Description/History

Multiple websites describe Astro Instrument Inc. (Astro) as an electrical repair shop (Michigan Business Directory 2017; Free Business Catalog 2017). The Aviation Maintenance Magazine still has a listing for Astro Instruments in its maintenance directory (Aviation Maintenance Magazine 2017). A 1992 survey by the State of Michigan identified several radioactive instruments and items assumed to contain radium since the items were aviation instruments. The items may have been shipped to an overseas company (NRC 2017).

The brick and block structure located at 11496 Portlance Avenue is approximately 1,800 square feet, and is shown in Figures 1 and 2. A review of available Google Earth images dating back to 2002, shown in Figure 3, indicates that the site and building do not appear to have undergone any significant configuration changes in the last 15 years.

The Wayne County Register of Deeds database confirmed that 11496 Portlance Avenue was once occupied by Astro. At that time, the property was owned by Richard W. Tuscany. The database also showed that Tuscany sold the property in January 2007 to the following groups: Aladdin Realty & Investment Inc. DBA, Allied Realty & Investment, and CP Investments LLC (Wayne County 2017a). According to a representative from the Michigan Department of Licensing and Regulatory Affairs (LARA), Astro was registered in Michigan from April 1970 until July 2009, when it was dissolved by the state for not submitting its annual report (ORAU 2017). The Wayne County Treasurer's database shows that Diva Dolls Salon occupied the building at some time, but no dates are provided (Wayne County 2017b). Manta.com indicated that Make It Happen Martial Arts established a business at this location in 2010 (Manta 2017)—the facility was occupied by Make It Happen Martial Arts until at least 2013. Note that the image capture in Figure 1 was taken in 2013 (Google Earth 2017). The property was on the 2017 foreclosure listings sent out by the Wayne County Treasurer as a property subject to tax foreclosure, and the owner/interested party listed in this document is Kawan Adams (Sabree 2016).



Figure 1. 2013 Street View of 11496 Portlance Avenue, Detroit, Michigan from September 2013 (Google Earth Pro 2017)

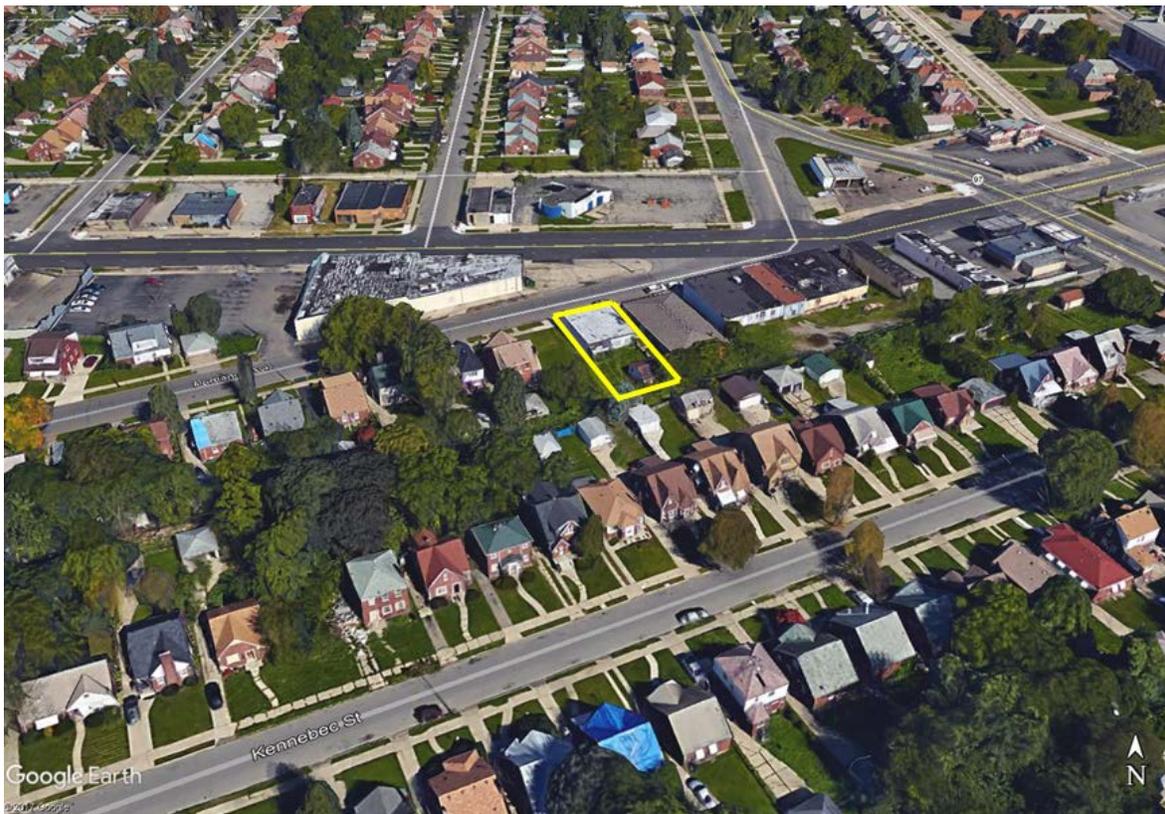


Figure 2. Location of the 11496 Portlance Avenue Property in Detroit, Michigan (Google Earth Pro 2017)



Figure 3. Aerial View of the Portlance Avenue Property in Detroit, Michigan Site from March 2002 (Google Earth Pro 2017)

Information Regarding Radium Sources/Contamination at the Site

The State of Michigan conducted a survey of the facility in 1992 (NRC 2017). It is not known if this survey was restricted to the building interior, or if it included outside areas. Nor is it known if this was strictly a gamma survey, or whether it included an evaluation of potential alpha and/or beta contamination. The State's report indicated that Astro "had many radioactive instruments, many faces, and various pointers" and that they employed a "microR/hr meter." The latter would not have enabled Astro to identify alpha/beta-contaminated surfaces.

Facility personnel stated that they had been contacted by a broker for surplus aircraft parts, and it was likely that many of their radioactive parts would be sold/shipped overseas (NRC 2017). It is possible that Astro could have received other radioactive instruments that may have contained radium since the 1992 survey.

Summary of Current Radium Levels:

As of August 2017, it is not known if radium sources and/or radium contamination are present at the site.

Location and Population Near the Site

The site at 11496 Portlance Avenue is located in the city of Detroit in Wayne County, Michigan. According to the 2010 U.S. Census, the population of Detroit was 713,777; the 2016 population estimate for the city was 672,795 (United States Census Bureau 2017). Figure 2 shows the location of the facility within the local community.

Current State/other Federal Involvement

After the State of Michigan's survey in 1992, Astro informed the State that it intended to sell radioactive parts that are assumed to contain radium to buyers overseas (NRC 2017), though records of the transaction could not be obtained. An extensive internet search of public records did not reveal any other information about state or federal involvement at the site.

Current Access and Activities at the Site

The site is currently listed by the Wayne County Treasurer as a foreclosed property (Wayne County 2017b), though the property may be generally accessible even if it is vacated.

Existing Engineering and Administrative Controls

No information about engineering or administrative controls could be identified.

Prioritization Ranking

NRC assigns a prioritization ranking for each site based on two factors. The first factor relates to whether or not the historical record confirms the presence of radium and there is no documentation that the radium contamination was previously remediated. The second factor considers the potential for human exposure. Based on these factors, the site is assigned Tier 1, 2, 3, or 4 using the following criteria:

- Tier 1 = the historical record confirms the presence of radium, the building or adjacent lands are occupied or frequented by visitors, and site access is not controlled.
- Tier 2 = the historical record confirms the presence of radium, the building or adjacent lands are not occupied or frequented by visitors, and site access is weakly controlled.
- Tier 3 = the historical record confirms the presence of radium, the building or adjacent lands are not occupied or frequented by visitors, and site access is strongly controlled.
- Tier 4 = the presence of radium is suspected but not confirmed by the historical record.

Radioactive items assumed to contain radium are confirmed to have been present at the site based on radiological survey data from 1992. The site seems to be unoccupied and has no known access controls, classifying it as Tier 2.

References

Aviation Maintenance Magazine 2017. Maintenance, Repair & Overhaul Directory, Astro Instrument Company,
http://directorypub.com/SRCH/compdetail.php?aid=0014980&pub_id=6000029, accessed August 29.

Free Business Catalog 2017. <https://mi.freebusinesscatalog.us/company/astro-instrument-inc.html>, accessed August 29.

Google Earth Pro 2017. Accessed August 29.

Manta 2017. <https://www.manta.com/c/mrs3rc6/make-it-happen-martial-arts>, accessed August 29.

Michigan Business Directory 2017. http://www.michigan-webbusiness.com/company-astroinstrumentinc_307275, accessed August 29.

NRC 2017. *Letters from the State of Michigan re: Non-Military Radium Program*, prepared by the State of Michigan under Cooperative Agreement with the Nuclear Regulatory Commission, Regional Offices and the Office of Nuclear Materials Safety and Safeguards, July 7. (Agencywide Documents Access and Management System [ADAMS] Accession No. ML16288A777).

ORAU 2017. Notes on personal communication between Andrew Owens (ORAU) and the Michigan Department of Licensing and Regulatory Affairs, Corporate Division 517-241-6470, phone conversation, August 15.

Sabree 2016. "2017 Notice of Forfeited Property Subject to Foreclosure" Available at <http://www.waynecounty.com/documents/exec/treasurer/2017ForeclosureListing.pdf#toolbar=1&view=FitH>, accessed August 29, 2017.

United States Census Bureau 2017.
<https://www.census.gov/quickfacts/fact/table/detroitcitymichigan/PST045216>, accessed August 15.

Wayne County 2017a. Register of Deeds,
<https://www.waynecountylandrecords.com/recorder/eagleweb/viewDoc.jsp?node=DOCCL-27085101>, accessed August 29.

Wayne County 2017b. Wayne County Treasurer, Property Tax Listing System,
http://www.waynecounty.com/treasurer/treasurer_payonline.htm, accessed August 29.

Radium

Radium was one of the first radioactive elements ever discovered. Marie and Pierre Curie unlocked the atom's secrets in 1898, opening the door for important innovations using radioactivity in medicine and industry. Radiation quickly became a consumer and medical sensation and radium was the posterchild. Experts concluded radiation was a lifesaver after finding it reduced tumor growth and was present in the waters at some health spas. Soon there were many radium products on the market that purported to improve health and vitality. But tragic stories began to emerge of the health impacts. Perhaps the most well-known is the "radium girls," who painted watch faces with glow-in-the-dark radium paint and developed infections and jaw cancer from licking their brushes into fine points.

Early regulation

When evidence of harm began to emerge in the early 1900s, the states each made their own decisions about how to regulate. Courts also took varying approaches on victim compensation. The federal government took action to guard against false advertising and regulate mail shipments, conducted studies, and organized some voluntary protections.

As radioactive materials became more widely available following World War II, they remained largely under state control. Radium use declined in medical and consumer products in favor of other safer materials.

Regulation today

Work on securing radioactive materials took on new urgency following the terrorist attacks on the United States in September 2001. Those attacks prompted the International Atomic Energy Agency to develop a code of conduct in 2004 to limit the potential for malicious acts. That code places one form of radium, known as radium-226, and other radioactive materials into categories based on their quantity and potential hazard.

The NRC has specific security requirements tied to these categories. As support for the IAEA code grew, Congress passed the Energy Policy Act in 2005, giving the NRC authority over radium-226. This law marked the first time the federal government had a comprehensive role in ensuring the safe use of radium-226.

Many states had developed strong programs for regulating radium and other naturally-occurring radioactive materials and it took time to transition authority. The NRC had regulations in place and fully assumed oversight in 2009. Initially, NRC staff worked exclusively with the military to identify sites

where radium might be present. These discussions made clear that the NRC's role would include ensuring that sites where radium was used are maintained in a way that protects public health and safety.

In 2016, the NRC and Department of Defense signed a [Memorandum of Understanding \(MOU\)](#) describing roles in the cleanup of radium and other unlicensed radioactive materials at military sites. The MOU and a [Regulatory Issue Summary](#) clarify NRC's jurisdiction over military radium. In late 2016, the NRC began monitoring two sites under the MOU: Treasure Island Naval Station in San Francisco and Dugway Proving Ground in Utah.

In 2013, the agency learned of two commercial sites where radium-226 had been found and other federal agencies had gotten involved. The Environmental Protection Agency was overseeing portions of the Waterbury Clock Company in Connecticut. The National Park Service was overseeing Great Kills Park in New York.

NRC staff is working with the current owner of the Waterbury Clock Company site. Contaminated areas of the site are under EPA oversight through its Brownfields Program, which provides assistance to clean up contaminated properties. NRC staff is working with EPA to clarify oversight roles and responsibilities under that program.

In 2016, NRC staff began developing an MOU with the National Park Service that will also clarify the NRC's jurisdiction over radium at Great Kills Park. The NRC is monitoring cleanup activities that the Park Service is implementing under Superfund, more formally known as the Comprehensive Environmental Response, Compensation and Liability Act.

Those projects prompted a search to identify sites in NRC's jurisdiction where radium was used, and to find out how much, if any, cleanup was done. This search was not a result of any known health and safety issues. Rather, because of its mandate to protect public health and safety, the NRC wanted to be sure there were no additional sites that might pose a risk.

With the help of the Oak Ridge National Laboratory, the NRC began to develop a fuller picture of commercial radium use. The lab produced a [catalog](#) of the various products developed and sold to the public in the early 20th century. By reviewing publicly available records, Oak Ridge identified sites where radium may have been used to make consumer goods. Then the lab looked for any cleanup records. Oak Ridge transmitted the results to the NRC in November 2015. Since that time, the agency has been working on plans to gather more information about those sites.

The NRC is working with state and local governments to identify any additional records that may help clarify whether any site cleanup has taken place. The goal is to ensure that public health and safety is adequately protected at these sites.

October 2016

OTHER KEY OFFICES

- ◆ The **Office of Enforcement** develops policies and programs to enforce NRC requirements. Enforcement action is used as a deterrent to emphasize the importance of compliance with regulatory requirements and to encourage prompt identification and prompt, comprehensive correction of violations. The office manages major enforcement actions against licensees, and assesses the effectiveness and uniformity of enforcement actions taken by NRC regional offices. Enforcement powers include notices of violations, fines, and orders to modify, suspend or revoke a license. Two separate offices are responsible for investigations.
- ◆ The **Office of Investigations** conducts investigations of licensees, applicants, contractors and vendors. The office investigates all allegations of wrongdoing by individuals or organizations other than NRC employees and NRC contractors. In addition, the office keeps abreast of inquiries and inspections and advises on the need for formal investigations. It also keeps other components of the agency informed of matters under investigation as they affect safety.
- ◆ The **Office of the Inspector General** is a statutory post mandated by the Inspector General Amendments Act of 1988. The office conducts independent reviews and appraisals of internal NRC programs and conducts investigations of alleged wrongdoing by NRC employees and contractors.

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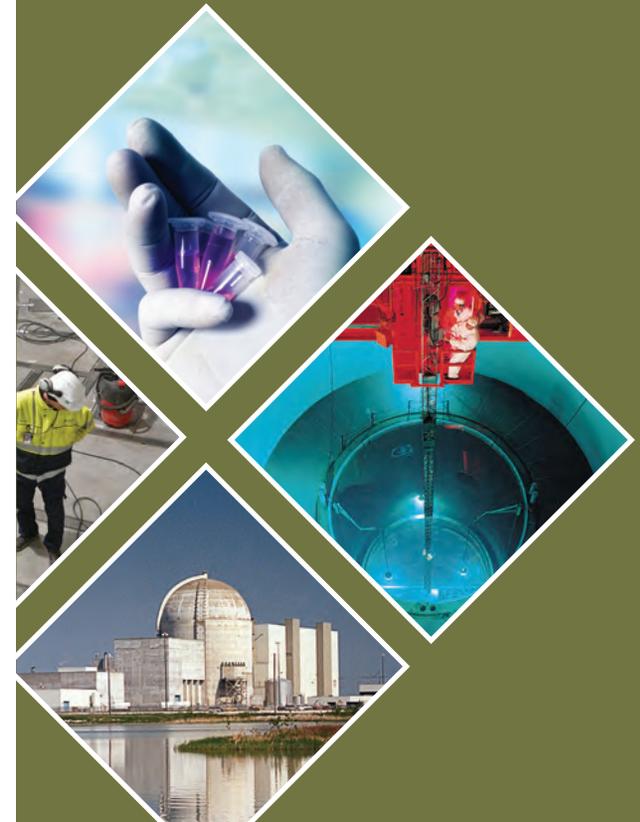
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U.S. Nuclear Regulatory Commission Overview



NRC MISSION

The NRC licenses and regulates the Nation's civilian use of radioactive materials to protect public health and safety, promote the common defense and security, and protect the environment. Specifically, the NRC regulates commercial nuclear power plants; research, test and training reactors; nuclear fuel cycle facilities; and the use of radioactive materials in medical, academic and industrial settings.

The agency also regulates the transport, storage, and disposal of radioactive materials and waste, and licenses the import and export of radioactive materials. While the NRC only regulates industries within the United States, the agency works with agencies around the world to enhance global nuclear safety and security.

STATUTORY AUTHORITY

The Energy Reorganization Act of 1974 created the NRC from the Atomic Energy Commission. The new agency was to oversee — but not promote — the commercial nuclear industry. The agency began operations on January 18, 1975. The NRC's regulations can be found in Title 10, "Energy," of the *Code of Federal Regulations* (10 CFR).

The NRC, its licensees (those licensed by the NRC to use radioactive materials), and the Agreement States (States that assume regulatory authority over use of certain nuclear materials) share a responsibility to protect public health and safety and the environment. Federal regulations and the NRC's regulatory program are key, but the primary responsibility for safely handling and using these materials lies with the licensees.



ORGANIZATIONS AND FUNCTIONS

The NRC's Commission is made up of five members nominated by the President and confirmed by the U.S. Senate for 5-year terms. The President designates one member to serve as Chairman. The Chairman acts as the principal executive officer and spokesperson of the agency. The members' terms are staggered so that one Commissioner's term expires on June 30 every year. No more than three Commissioners can belong to the same political party.

The Commission formulates policies and regulations governing nuclear reactor and materials safety, issues orders to licensees, and adjudicates legal matters. The Executive Director for Operations carries out the policies and decisions of the Commission, and directs the activities of the program and regional offices. The NRC has about 3,600 employees and an annual budget of about \$1 billion.

The NRC is headquartered in Rockville, Md., and has four regional offices. The **Regional Offices** conduct inspection, enforcement (in conjunction with the Office of Enforcement), investigation, licensing, and emergency response programs. At least two NRC employees, called Resident Inspectors, are assigned to, and work out of, each nuclear power plant. The NRC also has a Technical Training Center in Tennessee.

The major program offices within the NRC include:

- ◆ **The Office of Nuclear Reactor Regulation.** Handles all licensing and inspection activities for existing nuclear power reactors and research and test reactors.
- ◆ **The Office of New Reactors.** Oversees the design, siting, licensing, and construction of new commercial nuclear power reactors.
- ◆ **The Office of Nuclear Security and Incident Response.** Oversees agency security policy for nuclear facilities and users of radioactive materials. It provides a safeguards and security interface with other Federal agencies and maintains the agency's emergency preparedness and incident response program.



◆ **The Office of Nuclear Material Safety and Safeguards.** Regulates activities and oversees the regulatory framework for the safe and secure production of commercial nuclear fuel and the use of nuclear material in medical, industrial, academic and commercial applications; uranium recovery activities; and the decommissioning of previously operating nuclear facilities. It regulates safe storage, transportation, and disposal of high- and low-level radioactive waste and spent nuclear fuel. The office also works with Federal agencies, States, and Tribal and local governments on regulatory matters.

- ◆ **The Office of Nuclear Regulatory Research.** Provides independent expertise and information for making timely regulatory judgments, anticipating problems of potential safety significance, and resolving safety issues. It helps develop technical regulations and standards and collects, analyzes, and disseminates information about the safety of commercial nuclear power plants and certain nuclear materials.

Three independent groups serve the Commission:

- ◆ **Advisory Committee on Reactor Safeguards,** mandated by statute, is a committee of scientists and engineers independent of NRC staff. They review and make recommendations to the Commission on all applications to build and operate nuclear power reactors, the safety aspects of nuclear facilities and the adequacy of safety standards. This includes update license amendments and license renewals.
- ◆ **Advisory Committee on the Medical Uses of Isotopes** is made up of physicians and scientists who consider medical questions and, when asked, give expert opinions to the NRC on the medical uses of radioactive materials.
- ◆ **Atomic Safety and Licensing Board Panel** provides a way for the public to get a full and fair hearing on civilian nuclear matters. Individuals who are directly affected by licensing action involving certain facilities producing or using nuclear materials may submit a request to participate in a hearing before these independent judges.