# A PENN STATE CONTINUING EDUCATION PROGRAM ON

# LOW-LEVEL RADIOACTIVE WASTE DISPOSAL AND MANAGEMENT: LESSONS LEARNED

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## ABSTRACT

Since November of 1983, The Pennsylvania State University, Institute for Research on Land and Water Resources has provided the citizens of the Commonwealth of Pennsylvania with information on low-level radioactive waste disposal and management through a continuing education program called the PIER (Public Involvement and Education on Radiation) Program. This paper will review the form, function, and development of this continuing education program and some of the lessons learned in providing citizens of the Commonwealth with information in both formal and informal educational settings.

## LESSON #1

Education must be a concomitant part of public policy related to nuclear waste issues.

### Pre-program Activities

With the passage of the Low-Level Radioactive Waste (LLRW) Policy Act of 1980, Public Law 96-573 set in action the requirements for states to dispose of non-federal waste generated within their respective states. Though the law did encourage and support interstate compacts and set up regional disposal facilities, it did not bring the problem to the public in any formal or informal educational format, except through the news media as part of normal reporting methods. The law, in effect, passed the problem onto nuclear related producers and customers, bureaucrats and elected officials for their action, but not to the public as whole.

During 1981, the Department of Energy began assisting state executive branches to establish organizations for the possible formations of compacts and the eventual development of regional disposal sites. These efforts on the part of DOE also provided for research on improving information for decision makers on site development characterization and other related information. During 1981, The Pennsylvania State University received a research grant through EG&G Idaho, Inc. via DOE for a study entitled, "Low Level Radioactive Waste Disposal Siting: A Social and Technical Plan for Pennsylvania."[1] This study was by no means the first for Penn State on this topic. In November of 1978, a group of Penn State researchers from diverse fields received a Ford Foundation grant and published a report entitled "Low Level Radioactive Waste Disposal in Pennsylvania: Recommendations on Procedures and Assessment."[2] It is important to note that neither of these reports had a public information component built into the final report to the public except through the press.

## LESSON #2

The government and research bodies cannot rely on the news media to educate the public on issues that may be controversial.

### Program Origin

In July of 1983, the Penn State study results were announced in a statewide press release. The 500+ page, four-volume study was almost immediately challenged, questioned, or denounced by local officials who saw this report as pointing a finger to where this LLRW could be deposited. The Pennsylvania State University was unable to respond to all of the questions, concerns, and allegations that resulted from the study because of financial constraints and limitations not anticipated by the University or the grantors. This caused some of the members of the research team to request funds for providing a continuing education program on this subject.

The University then began a search for financial support for a continuing education program. After exhausting its federal and state avenues of support, it turned to the private sector. In November of 1983, the Westinghouse Electric Corporation, through its wholly owned subsidiary, Hittman Nuclear Incorporated, provided Penn State with a $200,000 unrestricted grant for the purpose of "furthering the knowledge and education of the populace of the state of Pennsylvania in the use of radioisotopes and radioactivity as it relates to low-level nuclear waste disposal." Thus the PIER (Public Involvement and Education on Radiation) Program was initiated.

LESSON #3

Continuing education programs for the public on issues that may be highly controversial and emotional should be administered by groups that the public will respect and not perceive as a "sales" pitch.

Program Organization

The PIER Program is under the auspices of a wide variety of University administrators and faculty intercollege programs. The program recognized the need for a citizen's advisory panel early in its planning to avoid the image of the "ivory tower" becoming a criticism. The PIER Program also hired a program director in addition to the usual project director of the grant. The purpose of the program director would be to provide communication and coordination among the University-wide administrators, the PIER Coordinating Committee (made up of Penn State faculty and staff advisers), the PIER Advisory Panel (which consisted of eight respected citizens from the Commonwealth with various expertise that would act as an oversight group to the program), and people or groups that may request information in a formal or informal sense on low-level radioactive waste disposal and management issues or concerns.

LESSON #4

Citizen involvement and interaction for advisory panels must be more than just names on a register, but informed and responsive members.

PIER Advisory Panel

At the inception of the PIER Program, eight people were asked to serve on the Advisory Panel. These people were selected from eight categories that planners of this program felt were vital to the subject. The eight areas were: Higher Education, Basic Education, Farming, Business, Ecology, Hydrogeology, Medicine, and another person titled "citizen." Another selection criteria was representation. The panel had to be balanced in terms of residence or job description to cover the entire state, which includes 45,000 square miles.

An important part of the PIER Program is providing the eight advisory members with information on what the program is doing. It was decided that a monthly STATUS REPORT would be printed. It would include present program summaries, names of people who requested information, future program information, and news updates on the subject. Another important part of the program is holding quarterly PIER advisory meetings with PIER staff and Penn State faculty that will allow members to learn more about the subject from a realistic point of view. Thus far, members of the advisory committee have had day-long meetings that have included visits to a reactor facility, radioisotope research facility, medical hospital and its nuclear medicine and radiology departments, and a low-level radioactive waste storage and treatment facility.

PIER Advisory Panel members are encouraged to reflect, respond, and review the activities and actions of the program. Many members have made invaluable contributions to the program's organization, development, and transfer of information to the public.

LESSON #5

A viable continuing education program must have clear and simple goals and objectives.

Program Goals and Objectives

To provide citizens of the Commonwealth of Pennsylvania with a comprehensive educational program on low-level radioactive waste disposal and management.

To develop an awareness of radiation and specifically LLRW.

To emphasize the need for public involvement and responsibility to meet the federal mandate and ensure a safe, effective, and efficient means of disposal of LLRW.

LESSON #6

It is important to prioritize and stress key areas of a public problem to give people topics on which to focus.

Key Program Areas

The PIER Program has identified six broad areas. In order to solve the problem, each area has been characterized in order of importance.

1) Public Health and Safety
   Public Involvement
2) Defining the Problem
   Radiation Awareness
   Explaining the Waste Forms
3) Research and Technology
4) A Geological Environment and
   Ecological Concerns
5) Socioeconomic Analysis
6) Regulations/Procedures and
   Quality Assurance

LESSON #7

The dissemination of information must be done in a systematic and consistent manner.

Information Dissemination

Early in the PIER Program, a statewide news release was sent through the University's Public Information Office describing the program, its function, and desire to provide information for interested citizens and groups throughout the Commonwealth. In every major document published through the PIER Program, a program disclosure appears to ensure University integrity with its program supporter. Almost 600 individuals and/or organizations across the state of Pennsylvania were mailed a letter explaining the program and providing a name, address, and telephone number for more information through this continuing education program.

By April of 1984, each of Pennsylvania's 67 county libraries were sent a packet of information including the Penn State study, "Low Level Radioactive Waste Disposal Siting: A Social and Technical Plan for Pennsylvania," to be included as part of their printed resources. A letter was also provided, offering more copies and other information if desired.

It was recognized that the *media would need* further information on the subject of LLRW. Through the assistance of the Penn State College of Engineering's public relations representative, a television news reporter, who had done a five part series on LLRW in October of 1983, the PIER staff and University faculty, a booklet was published entitled, "LLRW: A Media Resource Notebook on Low-Level Radioactive Waste Disposal and Management."[3]

LESSON #8

Educating the public means that the public must make a commitment to study the issue.

Types of Programs

The PIER Program has provided interested citizens and organizations with a variety of learning experiences from one-half hour talks to day-long programs that include as many as six speakers on various subjects related to low-level radioactive waste disposal and management. Some programs included touring LLRW facilities at the Penn State University Park Campus.

LESSON #9

Continuing education programs are not best served in hostile environments. Requests for programs should come from the public or interested groups. A debate setting or format does not provide the audience with an educational opportunity, only guaranteed entertainment and emotionalism.

Program Requests

Over the past 15 months of service, the PIER Program has received requests and has mailed out or distributed over 25,000 copies of information on the LLRW issue. It has held programs for federal, state, and local government officials in various elected and appointed positions, and has presented information in 42 of Pennsylvania's 67 counties. Numerous clubs, associations, and organizations have also asked PIER Program representatives to speak at various conventions or meetings. The program can provide interested citizens with television tapes on PIER Program interviews; information on radiation and the atom; and other printed and non-printed materials including a 7' x 15' display on "radiation awareness" which includes slide/tape programs, a television, and a computer interactive program.

LESSON #10

Public information and education programs must be dynamic, patient, considerate, and knowledgeable about the people they are expected to serve.

In Summary

The PIER Program's involvement with people from various walks of life has enabled the staff to recognize certain points that should be considered by any agency formulating public policy. Some of those points specifically related to LLRW are:

1) One cannot assume that any community wants processes involving radiation in their community.

2) Education and information must take place long before a community is identified as a possible site for the disposal of waste.

3) A community liaison group is a must between government, industry, and the citizens affected in a particular municipality.

4) Radiation is a very emotional issue. It is easier to want the problem to disappear or allow fear to take charge of the process of solving the problem of disposal.

5) Government and nuclear industry must do a better job of ensuring quality assurance and public trust--which is almost non-existent.

6) Federal, state, and local government officials must recognize that today's high-tech world has more complex demands for waste disposal. Communities which accept regional or statewide disposal sites should receive some special considerations. These considerations could be in the form of tax adjustments or rebates, community health screening programs, civic improvements, or other forms of recognizing a community's role in waste disposal and management.

7) The cost of such special considerations must not be borne by taxpayers, but by the users of those high-tech services that produce the waste.

8) Quality assurance and control in operating waste disposal sites must include federal, state, and local regulation, supervision, and review to ensure public involvement in operating, maintaining, and monitoring a site over its period of institutional life as well as after its closure.

REFERENCES

1. The Pennsylvania State University, Institute for Research on Land and Water Resources, "Low Level Radioactive Waste Disposal Siting: A Social and Technical Plan for Pennsylvania," Final Report for Subcontract #C29-007909-EG&G Idaho, Inc., U.S. DOE Contract #DE-AC07-761D01570 (1983).

2. F. Clemente, W. Dornsife, R. Granlund, W. Jester, and J. Coletti, "Low-Level Radioactive Waste Disposal in Pennsylvania: Recommendations on Procedures and Assessment," The Pennsylvania State University, University Park, PA (1978).

3. J. Vincenti, C. Rusnak, R. Ruman, and E. Willoughby, "LLRW: A Media Resource Notebook on Low-Level Radioactive Waste Disposal and Management," Revised August 1984, The Pennsylvania State University, University Park, PA (1984).