INTRODUCTION

Our mission for 1990 was "to increase students' awareness and appreciation of geothermal energy with respect to both direct use and electrical power production." Hard work has accomplished much: using both responsive and pro-active techniques, the Geothermal Education Office has had national impact on K-12 curriculum as well as on general public awareness of geothermal energy.

800 HOTLINE & RESPONSE.
1) Established toll-free number.
2) Responded by phone and mail to over 1500 requests for information from students, teachers and others representing at least 35 states and several foreign countries. Response included referrals to other individuals and organizations (e.g. National Energy Foundation, Center for Renewable Energy Education, Renew America, Nat'l. Wildlife Federation, Worldwatch) as well as mailings. At least 50 other energy education organizations have requested information to include in their libraries.
3) Started library (pamphlets, booklets, reprints, videos, slides and other documents) to make free materials (for keeping or borrowing) available to teachers and students.

TEACHER INTEREST.
1) Participated in, and distributed information about geothermal energy at, teacher workshops and at National Science Teacher Association Western Regional Conference.
2) Conducted an energy curriculum contest, sponsored by the California Energy Commission, with the California Science Teachers' Association.
3) Contributed to the concept of conducting Teacher Workshop at Geothermal Resources Council International Symposium.
4) Sent information about geothermal energy and about the Geothermal Education Office for inclusion in several nationally distributed newsletters for teachers and students (e.g. N.S.T.A. Reports, Scholastic News).
5) Distributed announcements to utilities, industry and government offices encouraging referral of teachers to the Geothermal Education Office.
6) Became active members of other energy education organizations that support and develop energy education in schools.
DISCLAIMER

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DISCLAIMER

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7) Insured inclusion of the Geothermal Education Office in important statewide and nationally distributed energy education bibliographies.
8) Began development of plan for unsolicited mailings to teachers of student activities and information about geothermal energy.

DEVELOPMENT OF ORIGINAL CURRICULAR MATERIALS.
1) Formed Curricular Advisory Committee, a twelve-member group of representatives from government (U.S. Dep't. of Energy, California Energy Commission, Washington State Energy Office), national laboratories (Sandia), education (National Science Teachers Ass'n., California Science Teachers Ass'n.), industry (Unocal Corp., C.E. Exploration Co., Calpine Corp.), industry associations (Geothermal Resources Council), educational institutions (Oregon Institute of Technology), and utilities (San Diego Gas and Electric Co.) to provide critique and input for curricular materials developed and/or edited by the Geothermal Education Office.
2) POSTERS: a) Began development of instructional poster on workings of hydrothermal plant. b) Arranged with Lawrence Berkeley Lab to produce high school level poster showing how a steam turbine is powered, with cost, availability and environmental impact comparisons of different energy sources.
3) FACT SHEETS: Began development of clear, universally applicable fact sheets about geothermal energy that can be used for high school students and adults.
4) GRAPHICS: Developed for use in fact sheets.
5) LESSON PLANS: Communicated with Washington State Office of Environmental Education re contract for production of an elementary level curriculum.
6) INSTRUCTIONAL NEWSLETTER: Developed and produced the "Steam Press," an exciting, fun and very readable "geothermal journal," for students of all ages as well as for interested adults. To become an annual publication.

MONITORING.
1) Succeeded with unsolicited forceful efforts to correct and update a) Channing L. Betel's "About Geothermal Energy," (the most widely used public information booklet about the resource), and b) both the lower and upper level fact sheets of the National Energy Education Development Project (NEED).
2) Participated extensively in the development of geothermal fact sheets, classroom activities and lesson plans published by the California Energy Extension Service (CEES), the Center for Renewable Energy Education (CREE), the Solar Energy Research Institute (SERI).
3) Approached major textbook publishers and the California State Department of Education, both by letter and by oral testimony, for appropriate inclusion of geothermal energy in science and social studies textbooks.
4) Arranged with National Energy Foundation (NEF) to have the Geothermal Education Office participate in current and future development of materials on geothermal energy.
(Arrangement resulted from our unsolicited strong criticism of a K-12 curriculum package about renewable energy -- done for NEF under contract with ECRE -- which excluded geothermal energy.)

5) Arranged with the Marin County Office of Education to revise the energy section of its otherwise excellent K-6 curriculum package, "Spaceship Earth."

6) Wrote letters and made phone calls to a variety of environmental groups (e.g. Rainforest Action Network), publishers and newspapers (e.g. Honolulu Star Bulletin) requesting correction of incorrect facts and/or assumptions about geothermal energy. All contacts included offers of help/input from the Geothermal Education Office and included mailings of pertinent information.

GEOTHERMAL NETWORK.

1) Distributed announcements about the Geothermal Education Office to utilities, industry, government offices, state departments of education and other energy education organizations via mail, newsletter/bulletin articles and personal contact.

2) Joined selected environmental and energy education organizations and opened lines of communication with energy educators nationwide.

3) Initiated ongoing communications and P.R. with industry, utilities, government agencies, environmental groups and other energy education groups.

4) Developed ever-growing mailing and contact lists.

5) Participated in Geothermal Resources Council International Symposium, August '90 (maintained a small booth and spoke at Public Information session).

CONCLUSIONS

1) Great steps have been taken, but there still remains a great need for education about geothermal energy as an integral part of all environmental and renewable energy education. We must continue to involve ourselves with all energy educators and with important environmental groups.

2) Geothermal public relations is currently much too crisis-oriented. More pro-active education is crucial. We must build for the future by making people aware of geothermal energy at early ages and in large numbers. Many networks are already in place; we need to continue to plug into them.

With the continued assistance of the Department of Energy, and with the support of the geothermal community, our contribution to renewable energy education nationwide will be further strengthened.