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NEVADA GEOTHERMAL UPDATE

March 2004

NOTE - UPDATES AND NEW ITEMS ARE HIGHLIGHTED IN YELLOW

CURRENT POWER OPERATIONS

<u>Plant/Operator (year on-line)</u>	<u>Nameplate Capacity *</u>	<u>Location</u>
Beowawe Power Plant (1985) Beowawe Power LLC/Caithness Operating	16.6 MW	S13, T31N R47E
Bradys Power Plant (1992) Brady Power Partners/ORMAT	21.1 MW	S12, T22N R26E
<ul style="list-style-type: none">ORMAT Nevada Inc. (ORNI 9, LLC); Permit #533; API #27-001-90300 for Observation Well "82-14" issued Nov 3, 2003, NE/4 NE/4, Section 14, T22N R26E; Brady Hot Springs KGRA, Churchill County; PTD 5000'; Will be used to monitor resources currently being used for electrical power generation. Any fluids will be re-injected. New Location.ORMAT Nevada Inc. (ORNI 9, LLC); Permit #534; API #27-001-90301 for Observation Well "55-14" issued Nov 3, 2003, SW/4 NE/4, Section 14, T22N R26E; Brady Hot Springs KGRA, Churchill County; PTD 5000'; Will be used to monitor resources currently being used for electrical power generation. Any fluids will be re-injected. New Location.ORMAT Nevada Inc. (ORNI 9, LLC); Permit #535; API #27-001-90302 for Observation Well "88-11" issued Nov 3, 2003, SE/4 SE/4, Section 11, T22N R26E; Brady Hot Springs KGRA, Churchill County; PTD 5000'; Will be used to monitor resources currently being used for electrical power generation. Any fluids will be re-injected. New Location.		
Desert Peak Power Plant (1985) Brady Power Partners/ORMAT	12.5 MW	S21, T22N R27E
<ul style="list-style-type: none">ORMAT Nevada Inc. (ORNI 3, LLC); Permit #519PA for a geothermal project area issued March 7, 2003; Includes 8 production wells, 3 injection wells, and 2 observation wells; Project area includes sections 13-16 and 21-29, T22N R27E, Churchill County.ORMAT Nevada Inc. (ORNI 3, LLC); Permit #521; API #27-001-90267 for Industrial Well "43-21" issued May 12, 2003, SE/4 NW/4, Section 21, T22N R27E; Desert Peak, Churchill County; PTD 5500'; Will be used to generate power for sale to Nevada Power; Spud June 20, 2003; C and L Drilling Rig #6; Reached TD 5218' Aug 3, 2003; Directionally re-drilled from 3941'-5300', Tested well, cemented from 2637'-2741', Milled window from 1740'-1794', Re-drilled #2 from 1756'-2691'; TESTING WELL.ORMAT Nevada Inc. (ORNI 3, LLC); Permit #529; API #27-001-90298 for Industrial Well "27-15" issued Aug 11, 2003, SW/4 SW/4, Section 15, T22N R27E; Desert Peak, Churchill County; Second production well location in the Desert Peak Project Area; Spud Aug 8, 2003; C and L Drilling Rig #6; Reached TD 5809'; Injection test performed; MOVED RIG.ORMAT Nevada Inc. (ORNI 3, LLC); Permit #531; API #27-001-90299 for Industrial Well "37-21" issued Oct 6, 2003, SE/4 SW/4, Section 21, T22N R27E; Desert Peak, Churchill County; Third production well location in the Desert Peak Project Area; Spud Oct 14, 2003; C and L Drilling Rig #6; Set conductor at 100'; SUSPENDED.ORMAT Nevada Inc. (ORNI 3, LLC); Permit #536; API #27-001-90303 for Industrial Well "74-21" issued Nov 3, 2003, SE/4 NE/4, Section 21, T22N R27E; Desert Peak, Churchill County; Production well location in the Desert Peak Project Area; Spud Nov 16, 2003; C and L Drilling Rig #6; New Location, Drilled to depth of 4250'; Successfully tested; SHUT-IN.		

Dixie Valley Power Plant (1988) Caithness Dixie Valley/Caithness Operating	62.0 MW	S7, T24N R37E S33, T25N R37E
Empire Power Plant (1987) Empire Energy LLC	4.8 MW	S21, T29N R23E
Soda Lake No. 1 (1987) Soda Lake No. 2 (1991) Constellation Operating Services	26.1 MW	S33, T20N R28E
Steamboat I, IA (1986) Steamboat II, III (1992) S B Geo, Inc./Far West Capital	10.8 MW 47.8 MW	S29, T18N R20E
Steamboat Geothermal Power Plant/Caithness Power Plant (1988) Yankee-Caithness JVLP	14.41 MW	S5, 6, T17N R20E
<ul style="list-style-type: none"> ◆ Yankee Caithness Joint Venture, LLC: Permit #525, API 27-031-90219 for Industrial Production Well # 21B-5 issued Jul 14, 2003; NW/4 NW/4; Section 5, T17N R20E; Steamboat Springs, Washoe County, Nevada; PTD 5000'; Spud Jul 19, 2003, Nabors Rig #58, Rigged down Oct 10, 2003; Completed and tested; New directional completion 21B-5R drilled and currently being evaluated. ◆ Yankee Caithness Joint Venture, LLC: Permit #530, API 27-031-90220 for Industrial Injection Well # 64-32 issued Sep 17, 2003; SW/4 NE/4; Section 32, T18N R20E; Steamboat Springs, Washoe County, Nevada; PTD 1850'; Replacement well for the Coxi-1 well; Spud Sep 14, 2003; Lang Drilling Co.; Currently shut-in with plans to run additional cemented liner for completion as a new injection well. 		
Stillwater (1989) Stillwater Holdings, LLC	21.0 MW	S1, T19N R30E
Wabuska (1984) Homestretch Geothermal LLC	2.2 MW	S15, 16, T15N R25E

* Nameplate Capacity as reported to the Division of Minerals for 2002.

DIRECT USE OPERATIONS

Empire Group LLC; Empire, Washoe County, Nevada

<http://www.empirellc.com>

Gilroy Foods, A ConAgra Food Ingredients Company; Onion Dehydration Plant; Fernley, Nevada

<http://www.gilroyfoods.com/aboutus.jsp>

Seasonal onion dehydration processing operations currently idle. Plan to commence operations mid-May, 2004.

OTHER ACTIVE AREAS

Gerlach KGRA (T32N R23E), Washoe County

Salt Wells KGRA (T16-17N R30-31E), Churchill County

- ◆ A recent article from the Lahontan Valley News, by Cory McConnell, Fallon, Nevada Jan 29, 2004, states that "If all permits and approvals are granted as scheduled, Nevada Geothermal Specialists co-founder Bill Price said a 10-megawatt power plant could be online and harnessing the power of Salt Wells' two steamy aquifers by late 2005". - <http://www.nevadaappeal.com/apps/pbcs.dll/article?AID=/20040129/News/101290005>

Nevada Geothermal Specialists acquired 2 parcels containing approximately 3800 acres in T17N R30E, at the Nevada BLM KGRA Lease Sale on June 26, 2003. They paid \$17.25/acre for one parcel and \$5.15/acre for the other; see Nevada Geothermal Update, June 2003. Anadarko Petroleum Corp. originally drilled several wells in the area during the early 1980s.

Hot Sulphur Springs (Tuscarora), Elko County

- ◆ Earth Power Resources announced recent address change: 2407 S. Troost Ave., Tulsa, OK 74114; Contact Ron Barr (918) 743-5593.
- ◆ Earth Power Resources, Inc.; State Permit #526PA issued Aug 5, 2003 for a geothermal project area to include 8 production wells (PTD 4000'), 6 injection wells (PTD 4000'), and 10 observation wells (PTD 4000'); The project area will encompass sections 4,5,8,9,16,& 17, T41N R52E; Hot Sulphur Springs, near Independence Valley and Tuscarora, Elko County, Nevada. The purpose of the project area is to supply a 25 MW power plant for a power purchase contract awarded by Sierra Pacific.
- ◆ Earth Power Resources, Inc.; State Permit #527 for Industrial Production Well #57-8 issued Aug 8, 2003; API #27-007-90027; SW/4 SW/4 SE/4, Section 8, T41N R52E; Hot Sulphur Springs, Elko County, Nevada; Projected total depth 4000'; 1st production well location in Project Area 526PA; Spud Nov 14, 2003; Lang Drilling Company, continuous core rig; Did not reach objective, temporarily abandoned Nov 24, 2003; Considering re-drilling with rotary rig. The well name and location have been changed, (originally #46-8); TEMPORARILY ABANDONED.
- ◆ Earth Power Resources, Inc.; State Permit #528 for Observation Well #67-8 issued Aug 8, 2003; API #27-007-90028; NE/4 SE/4, Section 8, T41N R52E; Hot Sulphur Springs, Elko County, Nevada; Projected total depth 4000'; 1st observation well location in Project Area 526PA; Spud Dec 5, 2003 Lang Drilling Company rotary rig; Set 7" at 1350', set 4.5" at 2490', shut down 12/18-28 for Holidays; Resumed operations on Dec 29 with Boart Longyear continuous core rig; Drilled to TD 3810'; Ran tests, evaluating; COGITATING.
- ◆ Earth Power Resources, Inc.; Permit for 2D shot hole seismic survey; Project Area 526Pa; Hot Sulphur Springs, near Tuscarora, Elko County, Nevada; Approximately 7 line miles of acquisition planned including sections 4,5,8,9,10,16 &17, T41N R52E; Exploration survey permit.

Rye Patch/Humboldt House KGRA, Pershing County (Rye Patch Power Plant, 12 MW, 90% complete)

- ◆ Presco Energy/Department of Energy (DOE) National Renewable Energy Laboratory funded Thermal Gradient Wells; "Renewable Energy Advancement in Nevada".
The following update was submitted by Gina Tempel.
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Humboldt House Geothermal Area

Five geothermal temperature gradient wells were drilled near the Florida Canyon mine in Humboldt County to test the resource potential of the Humboldt House geothermal area (HHGA). The Rye Patch or Humboldt House area is located 50 km northeast of Lovelock, Nevada. Drilling and coring operations were conducted between May and July 2003, with 3 wells reaching a total depth of 1000 feet, 1 well to 500 feet, and 1 well to 1500 feet. A total of 1851 feet of core were recovered from three of the wells. Currently, geochemical and petrographic studies are being conducted on the core by scientists affiliated with the Great Basin Center for Geothermal Energy at the University of Nevada, Reno. Results of these geochemical and petrographic studies will be used to determine the source of the geothermal fluids at HHGA and the relative timing of the fluid movement with respect to the geologic history of the area. Well logs, a summary of drilling activity, a map, and initial thermal profiles can be found at <http://www.nbmg.unr.edu/geothermal/site.php?sid=Rye%20Patch> on the Nevada Bureau of Mines and Geology website.

Fly Ranch Geothermal Prospect Area; West Black Rock Desert, Washoe County

Blue Mountain Geothermal Prospect Area, Humboldt County

- ◆ NORAMEX CORP. Permit #500, API #27-013-90014 for Observation Well "Deep Blue #1 issued March 20, 2002; SE/4 SW/4, Section 14, T36N R34E, Humboldt County; PTD 2000'; Drilled in May, 2002; Plan to test the #1 well in near future.

- ♦ NORAMEX CORP. Permit #532, API #27-013-90015 for Observation Well “Deep Blue #2” issued Nov 3, 2003; SW/4 NE/4, Section 14, T36N R34E, Humboldt County; PTD 3400’; Blue Mountain area; Will be used to further evaluate the commercial potential of the geothermal resource. Spud March 25, 2004, Lang Drilling Company; Drilling.

Fallon Naval Air Base; T18N R29E; Churchill County

- ♦ Geophysical survey application received at BLM on November 4, 2003; Dawson Geophysical Company, Section 13, T18N R29E, Case number NVN 77785. See GRC Bulletin Sep/Oct 2002 for paper by Francis C. Monastero, Geothermal Program Office, U. S. Naval Air Weapons Station, China Lake, referencing “Future Prospects on Military Lands” and planned exploration and development of the Fallon and Hawthorne, Nevada military sites. <http://www.geothermal.org/articles/coso.pdf>

Recent BLM Geothermal Leases Filed

- ♦ For more information on BLM leases in Nevada, see the website: <http://www.blm.gov/lr2000>.

Non-Competitive Geothermal BLM Lease Applications (08/03-03/04), Pending:			
ORMAT Nevada Inc.	NVN 77481; 1920.0 acres	T27N R40E (15,16,20)	Pershing/Lander Co.
ORMAT Nevada Inc.	NVN 77482; 1920.0 acres	T26N R40E (3,4,5)	Pershing/Lander Co.
ORMAT Nevada Inc.	NVN 77483; 2560.0 acres	T27N R40E (21,22,27,34)	Pershing/Lander Co.
Western Geothermal Ptnrs	NVN 77538; 2660.0 acres	T38N R62E (4,16,18,20,30)	Wells, NV, Elko Co.
Western Geothermal Ptnrs	NVN 77550; 1036.57acres	T38N R62E (6,28,32,34)	Wells, NV, Elko Co.
Western Geothermal Ptnrs	NVN 77551; 160.0 acres	T38N R62E (32)	Wells, NV, Elko Co.
Western Geothermal Ptnrs	NVN 77552; 160.0 acres	T38N R62E (28)	Wells, NV, Elko Co.
Western Geothermal Ptnrs	NVN 77600; 1280.0 acres	T11N R25E (27)	East of Smith Vly, Lyon Co.
Western Geothermal Ptnrs	NVN 77602; 1311.2 acres	T10N R25E (2,3)	East of Smith Vly, Lyon Co.
Geo-Energy Partners	NVN 77627; 2560.0 acres	T01S R36E (14,15,21,22)	Fish Lake Vly, Esmeralda Co.
Geo-Energy Partners	NVN 77628; 2556.24 acres	T01S R36E (3,10,11,13)	Fish Lake Vly, Esmeralda Co.
NORAMEX CORP.	NVN 77668; 1959.00 acres	T36N R34E (10,12,22)	West of Blue Mtn, Humboldt Co.
NORAMEX CORP.	NVN 77669; 1338.94 acres	T36N R34E (24,26)	West of Blue Mtn, Humboldt Co.
Stillwater Holdings LLC	NVN 77690; 400.00 acres	T19N R30E (28,29)	Stillwater, Churchill Co.
Western Geothermal Ptnrs	NVN 77711; 1280.00 acres	T17N R31E (33,34)	Salt Wells, Churchill Co.
Western Geothermal Ptnrs	NVN 77712; 1296.58 acres	T16N R31E (3,4)	SE of Salt Wells, Churchill Co.
Western Geothermal Ptnrs	NVN 77722; 1920.00 acres	T18N R30E (22,26,27)	North of Salt Wells, Churchill Co.
Kingzett, James M.	NVN 77739; 2560.00 acres	T19N R26E (6) T20N R25E (34,36) T20N R26E (31)	Hazen, Churchill & Lyon Cos.
Kingzett, James M.	NVN 77740; 2560.00 acres	T21N R26E (2,8,12,16)	N of Hazen, Churchill & Lyon Cos.
Kingzett, James M.	NVN 77741; 2560.00 acres	T21N R26E (4) T22N R26E (34,35,36)	N of Hazen, Churchill & Lyon Cos.
McGee, Charles M.	NVN 77801; 640.00 acres	T12N R43E (34)	Big Smoky Valley, Nye County
Signorotti, Stephen G	NVN 77942; 240.00 acres	T31N R55E (36)	East of Dixie Flats; Elko Co.
Signorotti, Stephen G	NVN 77943; 1240.00 acres	T30N R55E (12,13,14)	East of Dixie Flats; Elko, Co.
Western Geothermal Ptnrs	NVN 77983; 200.00 acres	T08N R29E (25)	Mineral County, near Hawthorne
Western Geothermal Ptnrs	NVN 77984; 945.09 acres	T07N R30E (5,6)	Mineral County, near Hawthorne
Western Geothermal Ptnrs	NVN 77985; 1822.76 acres	T08N R30E (29,30,31,32)	Mineral County, near Hawthorne
Bright-Holland Company	NVN 78098; 800.00 acres	T34N R23E (13,24)	Fly Ranch, Washoe County
Bright-Holland Company	NVN 78099; 2192.61 acres	T34N R23E (1-3,10-12)	Fly Ranch, Washoe County
Bright-Holland Company	NVN 78100; 2083.23 acres	T34N R23E (14,15,22,23)	Fly Ranch, Washoe County
Noramex Corp.	NVN 78124; 1880.00 acres	T33N R40E (10)	
		T34N R40E (28,34)	Tipton Ranch, Humboldt County
Western Geothermal Ptnrs	NVN 78144; 1280.00 acres	T02S R39E (21,22)	Silverpeak, Esmeralda County

Recent Geothermal BLM Leases Issued:			
ORMAT Nevada Inc.	NVN 76209; 2560.0 acres	T24N R47E (10,15,16, 20)	Grass Valley, Lander Co.
ORMAT Nevada Inc.	NVN 76210; 2563.0 acres	T24N R47E (2,3,4,9)	Grass Valley, Lander Co.
ORMAT Nevada Inc.	NVN 76211; 2560.0 acres	T24N R47E (21,22,28,29)	Grass Valley, Lander Co.
PSG Resources LLC	NVN 77110; 640.0 acres	T02S R39E (15)	Silverpeak, Esmeralda Co.
PSG Resources LLC	NVN 77111; 640.0 acres	T02S R39E (10)	Silverpeak, Esmeralda Co.

Nevada Geothermal Spec	NVN 77271; 2520 acres	T17N R30E (23-26)	Salt Wells
Nevada Geothermal Spec	NVN 77272; 1274 acres	T17N R30E (35,36)	Salt Wells
Western Geothermal Ptnrs	NVN 77268; 1662.05 acres	T32N R23E (15,16,21,22)	Gerlach; ISSUED 12/1/2003
Western Geothermal Ptnrs	NVN 77273; 1865.64 acres	T17N R31E (19,30,31)	Salt Wells; ISSUED 12/1/2003

Competitive Sale Geothermal BLM Lease Applications (06/2003), DROPPED:			
NGP Power Corp	NVN 77269; 1346.92 acres	T16N R30E (1) T16N R31E (6)	Salt Wells
NGP Power Corp	NVN 77270; 1360 acres	T16N R30E (2,3)	Salt Wells

OTHER NEWS

News on the Energy Bill

- ◆ **Link to the new Senate Energy Bill:**

http://www.energy.senate.gov/legislation/energybill2004/full_text.pdf

- ◆ **GEA Washington Update, Feb 2004**

For more information regarding the New Energy Bill, DOE's Geothermal Budget, DOI's FY 2005 budget, visit Geothermal Energy Association's Washington Update - <http://www.geo-energy.org/Updates/2004/JanFeb04.htm>

- ◆ **New Mexico Bill Requires Utilities to Develop More Renewable Energy, March 15, 2004**

A Bill signed March 15, 2004 requires that electric utilities in the state use renewable energy sources for at least 5% of their sales by 2006, increasing 1% per year until 2011. U.S. Senator Domenici, R-NM, continues to push for an energy bill, saying his bill would reinstate renewable energy tax credits, which expired in January. -

<http://www.westernroundtable.com/news/article.asp?id=708>

- ◆ **AGI Government Affairs Monthly Review January 2004**

"Only One Brief Plea for the Energy Bill"

"After months of unsuccessful efforts to push his energy initiatives through Congress, President Bush made only one very brief plea to Congress to "pass legislation to modernize the electricity system, promote conservation, and make America less dependent on foreign sources of energy." The next day Energy Undersecretary Robert Card sought to clarify by telling a lunchtime audience hosted by the nonpartisan group Resources for the Future that the administration remains committed to its energy agenda.

Despite these reassurances, there is speculation about the fate of the energy bill. Senate Energy and Natural Resources Committee Chairman Pete Domenici (R-N.M.) is working to get the votes needed to pass the energy bill in the Senate. According to Greenwire, Domenici said, "The one option I absolutely will not consider is breaking this bill up. It's the start of the year, and we're only two votes down."

On January 22nd, Senators Hillary Rodham Clinton (D-NY), Maria Cantwell (D-WA.), Russ Feingold (D-WI) and Jim Jeffords (I-VT) introduced a bill that would amend the Federal Power Act to include electricity reliability standards, S. 2014. This may be the first of many attempts to salvage portions of the energy bill by taking a singular provision and introducing it as a stand-alone bill. Lawmakers are worried about cost of the bill and projections for the deficit over the next 10 years have worsened. One way to drive the cost of the bill would be to carve out provisions and pass smaller, stand-alone bills rather than a singular, hulking piece of legislation.

Not wanting to see his hard work amount to nothing, as of late last week, Domenici was still insisting to Greenwire that it is too early to break up the bill and would fight all efforts to do so."

American Geological Institute Government Affairs Program - <http://www.agiweb.org>

BLM Proposes \$1.7 Billion for FY 2005 Budget

To Enhance Multiple-Use Management through Conservation Partnerships

- ◆ "To promote conservation partnerships that enhance its multiple-use management of the public lands, the Interior Department's Bureau of Land Management (BLM) today proposed a Fiscal Year 2005 budget of \$1.7 billion. The BLM's FY 2005 budget proposal, which is a \$53 million programmatic increase over the FY 2004 enacted level of funding, would provide increases of \$4.8 million for the agency's resource-restoration Challenge Cost Share program and \$3.2 million for its sage-grouse conservation and restoration efforts. The budget request also includes increases of \$5.6 million for land acquisition and \$4 million for monitoring the implementation of new land-use plans. The Bureau's 2005 budget proposal redirects \$10.5 million for management of the more than 39,000 wild horses and burros that roam the public lands. Through a combination of new funds and redirected

funds, the budget proposes an increase of \$12 million to improve the health of forest lands in western Oregon.” - http://www.blm.gov/nhp/news/releases/pages/2004/pr040202_budget.htm

Geothermal Industry and BLM Coordination Meeting; January 27, 2004; Reno, Nevada

- ◆ Reno, Nevada BLM considers the meeting “a successful start to furthering industry and BLM coordination of the geothermal program in Nevada”. An agenda is being developed for the follow up meeting, which will be held in May.
- ◆ Approximately 40 people attended the meeting and heard discussions from representatives of Industry and Government concerning issues related to geothermal development in Nevada.
- ◆ The group formed two committees to explore policy issues and technical matters and will meet again in May. - <http://www.rgj.com/news/stories/html/2004/01/28/62691.php>

GRED-III, Application Due 5/28/2004

- ◆ DOE's Office of EERE is seeking financial assistance applications for the third Geothermal Resource Exploration and Definition (GRED III) Program. Through this Funding Opportunity Announcement (FOA), DOE intends to provide financial support for the exploration and definition of new geothermal resources, which will ultimately lead to more electrical generation and direct-use applications from geothermal resources. DOE has requested approximately \$2 million in FY 2004 for this program. The actual level of funding, if any, depends on the appropriations for this program. DOE anticipate(s) making 3-10 awards under this announcement depending on the size of the awards.

Title: Geothermal Resource Exploration and Definitions, GRED-III

Number: DE-PS36-04-GO94016

Due Date: 05/28/2004

<http://e-center.doe.gov/iips/faopor.nsf/e6458ce53c05cf038525645200788ab8/fe9ef9c9026d358585256e5f007d292d?OpenDocument>

Preserving the Geothermal Technical Literature - Geothermal Technologies Program of the U.S. Department of Energy.

- ◆ Princeton Energy Resources International is supporting the efforts to archive, in electronic form, important reports that resulted from U.S. government-sponsored research on geothermal energy since 1974. “The geothermal Technologies Program asked Princeton Energy Resources International (PERI) to survey where the technical literature has ended up, how to find it, and what broad steps might be useful to ensure that important information remains accessible. PERI has already contacted several geothermal program managers at U.S. national laboratories and several information collection agencies. This research has yielded two reports. They can be accessed by going to the PERI website at <http://www.perihq.com> and clicking on the Geothermal E-Archive Project link at the bottom of the page. You can support the effort by completing the survey that is also available via the PERI website”. Please contact Dan Entingh (301) 468-8418 or dentingh@perihq.com.

Phoenix-Based Salt River Project Adds Geothermal Purchase to Its Renewable –Energy Portfolio

- ◆ February 19, 2004. SRP announced a five-year agreement to purchase 25 megawatts of power and renewable energy credits from TransAlta Energy Marketing, US. The credits are generated by geothermal power plants operated by CalEnergy in the Imperial Valley, California. For more information regarding SRP's EarthWise Energy Program – <http://www.srpnet.com/earthwise>

Sierra Pacific Resources Evaluating Bids for New RFP

- ◆ February 2004; 2003 RRP Status
Colin Duncan of Sierra Pacific reports that they received a wide spectrum of proposed projects to the 2003 Renewable Resources Request For Proposal (RFP). The 2003 RFP received proposals for Geothermal, Wind, Solar, Hydroelectric and BioMass projects. Existing geothermal projects from earlier RFP's include ORMAT, who is on schedule with their 30Mw Desert Peak contract and Earth Power in Elko County, who is continuing forward with their 20Mw geothermal contract. Two renewable projects, which were awarded contracts during earlier RFP's, have been terminated. The ATS 40 Mw Geothermal project in Steamboat, Washoe County, was terminated and an 80 Mw Wind project by Ceilo was also cancelled. In addition to the 120 Mw lost by ATS and Ceilo, Colin Duncan estimates that by the year 2007, they will need an additional 30 Mw bringing the total to 150 Mw needed by the year 2007 from non-solar renewable resources.

- ◆ Sierra Pacific Resources' two Nevada subsidiaries issued a new Request for Proposals for energy generated by renewable energy fuel sources. Responses were due to the utilities and bidding was closed on August 18, 2003; For more information see the website at:
<http://www.sierrapacificresources.com/company/RFPs/renewablerfp.html>
News release: <http://www.sierrapacificresources.com/news/releases/spr/1056956400.html>
"On October 24, 2003, Sierra Pacific Power and Nevada Power (Companies) issued letters to the respondents of the 2003 Renewable Energy RFP indicating if they were on the "Short List", the "Secondary List" or the "Not Successful List".... <http://www.sierrapacificresources.com/company/RFPs/>

Geothermal Resources Council's 2004 Annual Meeting, August 29-September 1, 2004

- ◆ Hyatt Grand Champions Resort, Palm Springs, CA. <http://www.geothermal.org/meet.html>
GEA Trade Show/GRC Annual Meeting
The 2004 GEA Trade Show and GRC Annual Meeting will be held at the Hyatt Grand Champions Resort in Palm Springs, California from August 29, 2004 to September 1, 2004. For information about the GEA Trade Show contact Daniela Stratulat at 202-454-5263 or visit <http://www.geo-energy.org>. For information about the GRC Annual Meeting call (530) 758-2360 or visit <http://www.geothermal.org>.

Interior Department Ordered to Shut Down Internet March 15 – Access Restored March 26, 2004

- ◆ The Interior Department was ordered to shut down Internet access on March 15 by a federal judge due to continued security problems threatening royalties owed to Native Americans. Internet access was restored March 26, with a stay granted giving each party one week to resolve issues.

Bureau of Land Management, Nevada Public Land Records Website

- ◆ The site provides access to the BLM Nevada's official Public Land Records. Master Title Plats, Use Plats, and Historical Indices are available though the Internet or from any one of the BLM Nevada's Information Access Centers. The centers are located in Battle Mountain, Caliente, Carson City, Elko, Ely, Las Vegas, Reno, Tonopah, and Winnemucca and are open Mon-Fri 7:30 am - 4:30 pm. The Land Record Internet site is available 24 hours per day, 365 days a year. Plans for this site are for expansion to include Cadastral Survey Records, Mineral Surveys, and Protraction Diagrams. <http://www.nv.blm.gov/landrecords/>

DOE/INEEL Geothermal Resource Location Maps for 13 Western States

DOE News Release; October 8, 2003

- ◆ **"New maps reveal expanded geothermal energy potential."** The regional geothermal resource map and the maps for each of the 13 Western states (Alaska, Arizona, California, Colorado, Hawaii, Idaho, Montana, New Mexico, Nevada, Oregon, Utah, Washington and Wyoming) are available on the Internet at;
<http://geothermal.id.doe.gov/maps-software>

Geothermal Energy Report Released

- ◆ The DOE Energy Efficiency and Renewable Energy and Department of Interior Bureau of Land Management (BLM) have released a geothermal energy report entitled "*Opportunities for Near-Term Geothermal Development on Public Lands in the Western United States.*" <http://www.nrel.gov/docs/fy03osti/33105.pdf>
The report identifies 35 sites in the Western U. S. as having the greatest potential for short-term development of geothermal power. Ten of these sites are in Nevada: Fish Lake, Beowawe, Salt Wells, Soda Lake, Steamboat, Stillwater, Dixie Valley, Brady, Rye Patch, and San Emidio.

Great Basin Center for Geothermal Energy

- ◆ Great Basin Center Contact Information:
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- ◆ Dr. Geoff Blewitt, March 31, 2004:
Geoff Blewitt at the Great Basin Center for Geothermal Energy reports the first assessment of data quality from a 30-station continuous GPS station network, installed to determine millimeter-level strain changes in the Earth's crust that might be used to target new geothermal resources. This network has been under construction for the first half of the fiscal year and came on line in late January 2004. Initial results from the first 60 days of operation show that station positions estimated every 24 hours repeat to within 1 to 2 mm in longitude and latitude. The goal is to resolve station motions to less than one millimeter per year, and then use 2-3 years of data to create a strain tensor map to identify areas undergoing active trans-tensional tectonics. These initial results show that the network is meeting (exceeding) the required level of data precision. - Dr Geoff Blewitt, Research Professor, University of Nevada, Reno, (775) 784-6691 extension 171 - <http://www.nbmgs.unr.edu/staff/geoff.htm>
- ◆ Update from Lisa Shevenell:
Three researchers from the Great Basin Center for Geothermal Energy, University of Nevada, Reno, received best paper awards at the annual Geothermal Resources Council Meeting held in Morelia, Mexico in October, 2003: Greg Arehart (title **Evidence for a Magmatic Source of Heat for the Steamboat Springs Geothermal System Using Trace Elements and Gas Geochemistry**), Geoff Blewitt (title **Targeting of Potential Geothermal Resources in the Great Basin from Regional to Basin-Scale Relationships Between Geodetic Strain and Geological Structures**), and Mark Coolbaugh (title **Geothermal GIS Coverage of the Great Basin, USA: Defining Regional Controls and Favorable Exploration Terrains**).
- ◆ On October 8, a new geothermal Web site was introduced at the Western States Renewable Energy summit held in Reno, NV. This new Web site was constructed at the Nevada Bureau of Mines and Geology (NBMG) with partial financial assistance from the 2001 DOE State Energy Program Special Projects funding. The site, located at <http://www.nbmgs.unr.edu/geothermal/gthome.htm>, focuses on geochemical data and maps for thermal waters in Nevada. Although still under construction, it is publicly accessible and acts as an update to "Thermal Waters of Nevada" by Larry Garside and John Schilling, published by the NBMG in 1979.

LINKS: USEFUL DATABASES AND GEOTHERMAL INFORMATION

- ◆ American Council on Renewable Energy (ACORE) – <http://www.americanrenewables.org/>
- ◆ American Geological Institute Government Affairs Program - <http://www.agiweb.org/gap>
- ◆ Black Rock-High Rock NCA (National Conservation Area) planning website – <http://www.blackrockhighrock.org>
- ◆ Bureau of Land Management – Nevada Geothermal Program - <http://www.nv.blm.gov/minerals/geothermal/index.htm>
- ◆ Council of State Governments – TrendsAlert; Renewable Energy and State Economics – <http://www.csg.org>. Summarizes issues and policy options for state officials, regarding economic potential of renewable energy.
- ◆ Geo-Heat Center, Oregon Institute of Technology, Klamath Falls, Oregon - <http://geoheat.oit.edu/>
- ◆ GeoPowering the West - <http://www.eere.energy.gov/geothermal/>
- ◆ GeoPowering the West, GeoPowering the West Calendar – http://www.eere.energy.gov/geothermal/gpw_calendar.html
- ◆ Geothermal Biz.com - <http://www.geothermal-biz.com/>
Geothermal biz.com was created to help the geothermal entrepreneur—companies, small businesses, Native American tribes, homeowners, and individuals—develop geothermal direct use and small power generation projects.
- ◆ Geothermal Education Office - <http://www.geothermal.marin.org/>.
PURPOSE. To promote public understanding about geothermal resources and its importance in providing clean sustainable energy while protecting our environment. SCOPE. The Geothermal Education Office (GEO) produces and distributes educational materials about geothermal energy to schools, energy/environmental educators, libraries, industry, and the public.
- ◆ Geothermal Energy Association - <http://www.geo-energy.org/>
Developing Plants in the U.S., New page being created; use the form to post your project - <http://www.geo-energy.org/Developing.htm>
- ◆ Geothermal Resources Council - <http://www.geothermal.org>

- ♦ **Great Basin Center for Geothermal Energy at the University of Nevada, Reno -** <http://www.unr.edu/geothermal/>
- ♦ **Idaho National Engineering and Environmental Laboratory (INEEL) -** <http://geothermal.inel.gov/>
- ♦ **James & James Science Publishers; Provider of information for energy and environment professionals worldwide; On-line database of renewable energy suppliers –** <http://www.jxj.com/>
- ♦ **National Geothermal Collaborative –** <http://www.geocollaborative.org/>
- ♦ **National Renewable Energy Laboratory (NREL) -** <http://www.nrel.gov/geothermal>. Geothermal Program; Access reports and publications on geothermal energy by Gerald Nix, Charles Kutscher, Barbara Farhar, Keith Gawlik, Brandon Owens, Walter Short.
- ♦ **Nevada Bureau of Mines and Geology, MI-2002, “The Nevada Mineral Industry 2002” -** <http://www.nbmg.unr.edu/hits.php?p=dox/mi/02.pdf>
- ♦ **Nevada Bureau of Mines and Geology, Geothermal Energy -** <http://www.nbmg.unr.edu/geothermal/index.html>
- ♦ **Nevada Commission on Mineral Resources, Division of Minerals -** <http://minerals.state.nv.us/programs/ogg.htm>
- ♦ **Nevada State Office of Energy, Renewable Energy & Energy Conservation Task Force, including report by Mary Riddel “Potential Economic Impact of Nevada’s Renewable Energy Resources” -** <http://energy.state.nv.us/taskforce/default.htm>
- ♦ **Nevada Public Utilities Commission -** <http://www.puc.state.nv.us/>
- ♦ **Office of the Governor, Nevada State Energy Office -** <http://energy.state.nv.us/taskforce/default.htm>
- ♦ **Office of Scientific and Technical Information; Subject portals on renewable energy and energy efficient technologies** <http://www.osti.gov/subjectportals/>
- ♦ **Renewable Energy Policy Project & CREST (Center for Renewable Energy & Sustainable Technology) -** <http://www.repp.org/>
- ♦ **Sandia National Laboratories Geothermal Research Dept. -** <http://www.sandia.gov/geothermal>
- ♦ **Sierra Pacific Resources, Renewables RFP -** <http://www.sierrapacificresources.com/company/RFPs/renewablerfp.html>
- ♦ **Southern Methodist University Geothermal Laboratory -** <http://www.smu.edu/geothermal/>
- ♦ **Stanford Geothermal Program -** <http://ekofisk.stanford.edu/geotherm.html>
- ♦ **U.S. Department of Agriculture, Rural Development -** <http://www.rurdev.usda.gov>
- ♦ **U.S. Geological Survey, USGS Open-file Report 99-425 online version 1.0, “Geothermal Industry Temperature Profiles from the Great Basin” -** <http://geopubs.wr.usgs.gov/open-file/of99-425/webmaps/home.html>

Information compiled by the Nevada Division of Minerals with assistance from:

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Under USDOE Cooperative Agreement: SEP/CA/03/006 supporting GeoPowering the West.

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