

TEXAS DEPARTMENT OF WATER RESOURCES

1700 N. Congress Avenue  
Austin, Texas



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Executive Director

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July 17, 1985

Hydraco Power, Inc.  
Route 2, Box 303  
San Marcos, Texas 78666

Re: Application No. 4492

Dear Sirs:

The above-referenced application is set to be considered by the Texas Water Commission at 2:00 p.m. on August 19, 1985 in Room 118 of the Stephen F. Austin State Office Building, 1700 North Congress Avenue, Austin, Texas. Enclosed is a copy of the proposal for decision and permit which has been recommended to the Commission for approval.

Within ten (10) days after the date of this letter, any party may file exceptions or briefs by delivering the original documents to the Commission. Any replies to exceptions and/or briefs shall be filed in the same manner within 20 days after the date of this letter. Copies of all exceptions, briefs, and/or replies shall be served promptly on all other parties with certification of service furnished to the Commission. Failure to provide copies may be grounds for withholding consideration of the pleadings.

Sincerely,

A handwritten signature in cursive script that reads "Joseph W. O'Neal".

Joseph W. O'Neal  
Hearings Examiner  
Texas Water Commission

JWO:ha  
Enclosures  
cc: See attached sheet

*See Tom  
re expenses*

cc: Bonnie & Tom McCarroll, P. O. Box 370, Martindale, TX  
78666  
Dea Wilson, Box 341, Martindale, TX 78655  
Carol Waggoner Thompson, P. O. Box 337, Martindale, TX  
78655  
Joan & Clinton Spragins, P. O. Box 27, Martindale, TX  
78655  
John Jordan, P. O. Box 246, Martindale, TX 78655  
Foster & Marilyn Jordan, P. O. Box 132, Martindale, TX  
78655  
Jim Wilson, P. O. Box 341, Martindale, TX 78655  
Jack & Marie Fairchild, 136 Varsity Circle, Arlington, TX  
76013  
Tom Goynes, Rt. 1, Box 55-R, Martindale, TX 78655  
Dwyer-Sanders Company, c/o Rick Triplett, Attorney at  
Law, 1705 Capital of Texas Highway, Bldg. D, Suite 200  
Austin, TX 78746  
Texas River Association, c/o David Price, 9200 Sandstone,  
Rt. 16, Austin, TX 78737  
Texas Parks & Wildlife Dept., 4200 Smith School Road,  
Austin, TX 78744, ATTN: Leland E. Roberts  
Andrew Wilk, 1705 Capitol of Texas Highway, Bldg. D,  
Suite 200, Austin, TX 78746  
Thomas Buckle, Attorney at Law, 602 W. 11th St., Austin,  
TX 78701  
Dr. T. R. Buie, P. O. Box 1410, San Marcos, TX 78666  
Rodger Zimmerman, Attorney at Law, Rt. 1, Box 74,  
Driftwood, TX 78619  
Donna Porter, Box 1109, San Marcos, Texas 78666  
Jess Webb, Route 2, Box 302BB, San Marcos, TX 78666  
Deliese Kennedy, Water Rights Section, TDWR  
Carol Lack, Water Rights Section, TDWR  
Mike Rogan, Office of General Counsel, TDWR  
Jack Cox, Public Interest Advocate, TDWR  
Charles H. Roth, Jr., 5711 Trailridge Dr., Austin, TX  
78731  
Leonard A. Husebosch, 1122 Verret, Houston, TX 77090  
John Bugge, 2702 Villa Maria, Bryan, TX 77802

HEARINGS EXAMINER'S PROPOSAL FOR DECISION  
to be presented to the  
Texas Water Commission

Hydraco Power, Inc., Route 2, Box 303, San Marcos, Texas 78666, has applied to the Texas Department of Water Resources for a Section 11.121 permit to divert 88,308.17 acre-feet of water per year from an existing reservoir on the San Marcos River, tributary of the Guadalupe River, Guadalupe River Basin, for hydroelectric power generation at the Martindale Dam in Martindale, Texas, approximately 11 miles west-southwest of Lockhart, Caldwell, County and approximately 20 miles northwest of Seguin, Guadalupe County. The San Marcos River on which the reservoir is located separates Caldwell and Guadalupe Counties. The Texas Water Commission accepted the application for filing on September 25, 1984 and designated it as Application No. 4492.

*Ted*  
*W. H. Hays*  
Joseph W. O'Neal, a Hearings Examiner with the Texas Water Commission, conducted a public hearing in Austin, Texas on November 15, 16 and 29 and December 3, 1984. Notice of the application and hearing was published on October 18 and 25, 1984 in the San Marcos News, a newspaper regularly published and generally circulated in Hays, Caldwell, and Guadalupe Counties, the area in which the source of water is located. On October 19, 1984, notice of the application and hearing was sent by first-class mail to all claimants and appropriators of record with the Department in the Guadalupe River Basin and all navigation districts in the basin.

Appearing at the hearing on behalf of the applicant were Rodger M. Zimmerman, Attorney; Jimmy C. Parker, President of Hydraco, Inc.; Rick G. Davis, Vice-President of Hydraco, Inc.; Jess Webb, Civil Engineer; Jay Neil, forestry expert, Division Manager of Trees, Inc.; Linda Parker; and Dianne Davis. Appearing on behalf of the Executive Director of the Texas Department of Water Resources were Michael Rogan, Staff Attorney; Deliese Kennedy, Applications Unit; Carol J. Lack, Hydrology Unit; and Cathy R. Stallings, Enforcement. Tom Buckle, Attorney, appeared to represent the following protestants: Bonnie McCarroll, Dea Wilson, Carol Waggoner Thompson, Joan Spragins, Clinton Spragins, Tom McCarroll, John Jordan, Foster and Marilyn Jordan and Jim Wilson. Also appearing as protestants were Jack and Marie Fairchild, Tom Goynes, Mike McClabb, Rick Triplett, and Dr. T. R. Buie. Leland E. Roberts, Biologist, and Suzanne Carter represented the Texas Parks and Wildlife Department. David Price represented the Texas River Recreation Association, and Andrew Wilk represented Dwyer-Sanders Company. Jack Cox, the Public Interest Advocate of the Texas Department of Water Resources, was present.

The following were admitted at the hearing as parties to the proceeding: the applicant, Hydraco Power, Inc.; the Executive Director and the Public Interest Advocate of the Texas Department of Water Resources; Bonnie and Tom McCarroll; Jim and Dea Wilson; Carol Waggoner Thompson; Joan and Clinton Spragins; John Jordan, Foster and Marilyn Jordan; Jack and Marie Fairchild; Tom Goynes; Dwyer-Sanders Company; Texas River Recreation Association; and Texas Parks and Wildlife Department.

*Transcript*  
The Hearings Examiner prepared a Proposal for Decision and drafted a proposed Order which were considered by the Texas Water Commission on May 6, 1985. The Hearings Examiner recommended that a permit be issued authorizing the applicant to generate hydroelectric power by making nonconsumptive use, at a rate not to exceed 122 cfs, of water from the reservoir. The Examiner recommended that the height of the dam be limited to an effective crest of 501.4 feet above mean sea level, which is the top of the concrete dam existing on the date of filing of the application, September 24, 1984.

The Texas Water Commission remanded the application for further hearings concerning the following:

1. Additional evidence concerning easements around the reservoir.
2. History of the dam concerning flashboards on top of the concrete crest of the dam.
3. Reevaluation of the application by the staff of the Executive Director for a level of impoundment to the top of the flashboards.

A conference was held on May 23, 1985 in Austin, Texas concerning the upcoming remand hearing, and the remand hearing was held on June 10, 1985, also in Austin.

The evidence indicates that Martindale Dam was constructed on the San Marcos River in 1883 by a Mr. A. H. Smith and was probably used to provide a source of power for operating a cotton gin and making ice at an ice house.

The Final Determination of Claims of Water Rights in the Blanco-San Marcos Rivers Watershed of the Guadalupe River Basin was adopted by the Texas Water Commission on June 3, 1980, which noted that Martindale Water Supply Corporation owned Certified Filing No. 331 (recorded in Caldwell County on June 27, 1914). It also noted that the construction of diversion facilities (dam and gin plant) authorized under the

certified filing commenced many years prior to filing, with installation of pipe and irrigation pumps in March, 1911. By an order of September 8, 1960, the Commission cancelled Certified Filing No. 331 save and except that portion relating to the dam and reservoir. No one appeared to represent Martindale Water Supply Corporation at the adjudication hearing, and no one filed a sworn statement pursuant to Section 11.307, Texas Water Code, on behalf of the claimant. A right was not recognized in the final determination under Certified Filing No. 331. On March 14, 1985, the 200th Judicial District Court of Travis County, Texas entered a Final Judgment and Decree (No. 312,993) affirming the Final Determination of Claims of Water Rights in the Blanco-San Marcos Rivers Watershed of the Guadalupe River Basin, thereby terminating authorization for the Martindale Dam and Reservoir under Certified filing No. 331.

The evidence indicates that from about 1925 until about 1940, Texas Power and Light Company operated a hydroelectric generating plant at the dam and probably discontinued operation because of cheaper alternatives for power supply.

Hydraco Power, Inc., a Texas corporation, purchased Martindale Dam from Martindale Water Supply Corporation in 1983. Mr. Jimmy C. Parker and Mr. Rick G. Davis, the two major stockholders of Hydraco, by themselves worked for about one and one-half years rebuilding the power plant. They utilized the original turbine, which was buried in about 12 feet of mud. The penstock house was rebuilt and insulated, the gearbox and generator were replaced, and the strainer gates, doors, and other associated hardware were refurbished. The upright stanchions on top of the dam were straightened to accept flashboards, and electrical controls and instrumentation were installed. Connection was made to supply power to the Bluebonnet Electric Cooperative.

The dam is a concrete rock-filled structure with the length that actually holds back water being about 103 feet. The height of the dam from the tailwater level below the dam to the top of the concrete is about 10 to 10-1/2 feet. The end of the dam on the Caldwell County side of the river abuts the 17' x 24' penstock house which contains the generator and gearbox as well as associated controls and equipment. The 5-foot diameter turbine is located below the penstock house in a tunnel below the reservoir water level. A vertical shaft from the turbine extends to the top floor of the penstock house to drive the gearbox, which in turn drives the generator. Steel gates which can be moved up and down control the flow of water under the penstock house.

The turbine is designed for a 12-foot head and a flow of 122 cubic feet per second. Since it is a reaction-type turbine, the range on the head and flow is narrow, and a variance, especially in the head, causes a substantial loss of power.

The applicant obtained a temporary permit (TP-4984, expiration date August 9, 1985) to divert and use part of the flow of the river (estimated to be 88,000 acre-feet of water per annum) for hydroelectric generating purposes.

In late September, 1984, the applicant started testing the power plant on and off line to Bluebonnet Electric Cooperative. In order to get a 12-foot head (the difference between the water level above the dam and the tailwater below the dam), the applicant installed flashboards in the I-beam stanchions on the top of the dam to raise the water level above the dam. A water level of 22 inches above the top of the concrete is needed to provide a 12-foot head. Also during the testing, the applicant let the water level drop to as low as 14 inches below the top of the concrete.

Several people testified at the hearing who live on property adjacent to the river, varying from 500 feet to 6,000 feet upstream of the dam. They testified that at the time the applicant was testing the system, the water in the river varied up and down from normal, dropping below one person's water intake pipe and at other times inundating boat docks and strips of land along the bank. They also expressed concern about the effect of the fluctuating water on trees along the edge of the reservoir.

The applicant indicated that it was raising and lowering the water level during the testing of the generating system, but after testing was completed and the system was operating normally, the water level would be maintained at a nearly constant level. However, the water level has to be maintained to provide a 12-foot head for efficient operation, which means the water level must be at the top of the flashboards. Due to the design of the system, it is not feasible to generate power with the water level only at the top of the concrete crest of the dam.

Although there was no direct testimony in the record that the flashboards were in place when TP&L was generating power, Mr. Parker stated that the boards must have been in place because the turbine requirements were the same since the same turbine was being used, as well as the same size generator



which required 12 feet of head. The applicant's engineer testified that the I-beam stanchions had been put into the concrete many years ago, also there is a groove in the concrete at the top of the dam into which the boards fit. Exhibit No. R-9, introduced at the remand hearing is a page from the Texas Utility News dated April, 1927. A photograph on that page clearly shows the upright stanchions on top of the dam, but it is not clear to the Examiner whether the flashboards were in place or not.

The Executive Director of the Texas Department of Water Resources contends that the application clearly seeks authorization to maintain the existing reservoir only to the level of the concrete crest of the dam, and that the applicant has not properly sought authority to raise the level of the dam above the existing crest. Although the applicant was given an opportunity prior to the remand hearing to provide the Executive Director of the Texas Department of Water Resources with additional technical data concerning the water level impounded to the top of the flashboards, it did not do so. However, the technical staff of the Department inspected the site on June 5, 1985 and determined that the Martindale Dam still appeared to be properly classified as a No. 3, low-hazard structure even if the top-of-dam elevation is raised two feet by means of flashboards.

Ms. Deliese Kennedy of the Applications Unit of the Department testified that her review of easements and consents for the inundation of property not owned by the dam's owners was confined to lands below the elevation inundated by the existing concrete dam. Although the applicant was given an opportunity to present additional evidence at the remand hearing concerning easements and consents, it did not do so. Also, the applicant did not present any further evidence concerning the line of demarcation.

Martindale Dam does not create a clearly identifiable reservoir as in the case of many lakes, such as where a dam is located across a canyon. Martindale Dam crosses a constantly flowing river, and it is very difficult to distinguish where the impounding effect of the dam begins on the river upstream of the dam. This location is known as the line of demarcation, and there was conflicting evidence as to where the line is located. Because of the conflict, it is difficult to determine the capacity of the reservoir, and the line must be known to determine whose property is affected by the reservoir. The applicant located a line of demarcation on the map submitted with the application. However, there was testimony that raising the water level by adding flashboards caused an increase in the water level on Dr. T. L. Buie's property

located 5500 to 6000 feet upstream of the dam, which is upstream of the line of demarcation as determined by the applicant.

Section 303.30 of the Texas Department of Water Resources Permanent Rules reads as follows:

§303.30. MULTIPLE OWNERSHIP OF EXISTING RESERVOIR. If an existing reservoir inundates land owned by more than one person, an application for a permit to authorize the dam and reservoir and to use the state water impounded in the reservoir should be joined in by all of the landowners. An operating agreement may also be required. If there is incomplete joinder, the applicant must provide the Commission with the name(s) and address(es) of the other landowner(s) and must obtain an easement or a consent, license, lease, or other type agreement as provided in §303.29 of this title (relating to Proposed Installation or Reservoir) from the landowner(s).

Since the applicant does not own the land inundated by the reservoir, the applicant has the burden of proof to show it has complied with Section 303.30 of the Department's rules. The deed records of Caldwell County show that on October 23, 1925, G. G. Ellison and wife, Lena Ellison, conveyed the right to A. H. Smith and Robert M. Harper to raise the dam to a height of 18 inches above the existing dam. However, the evidence in the record indicates that this easement does not apply to lands owned by three protestants, Joan E. Spragins, Dea Wilson, and Bonnie McCarroll. There is no question that the lands owned by them are affected by the level of the reservoir.

The Hearings Examiner understands the applicant's position and appreciates the many hours spent by Mr. Parker and Mr. Davis in doing an excellent job in rebuilding the power plant. The Examiner also understands the necessity of having a 12-foot head for operation of the power plant.

However, the Examiner cannot recommend that a permit be issued to impound water at a level higher than what would be caused by the existing concrete crest of the dam since it is the Examiner's opinion that the applicant has not met the requirements of Section 303.30 of the Texas Department of Water Resources Permanent Rules.

There were also other questions raised at the hearing concerning consent of persons owning land around the reservoir, and



also how far upstream of the dam land was affected by the impoundment, thus leaving a question as to who needed to give consent. The consents that are in the record are based on the provision that the lake level be maintained. The Examiner believes that the proper recommendation is that the applicant be issued a permit to divert water for hydroelectric power generation and to authorize the dam and reservoir with impoundment of water not to exceed a level caused by the existing concrete crest of the dam. It is the Examiner's opinion that granting such a permit would be in the public interest, considering that the dam and reservoir have been in existence since 1883.

The evidence clearly shows that water is available. Ms. Lack found that in 91 percent of the months from January, 1957 to September, 1982, the average flow of water in the river at Martindale Dam exceeded 122 cubic feet per second. Assuming the reservoir was full all the time, net evaporation averages 29 acre-feet per year, with the maximum evaporation being 54 acre-feet in 1956. Ms. Lack determined that sufficient water is available to allow for consumption caused by evaporation, and that there is no significant impact on downstream water rights holders from evaporation of the reservoir.

A special condition in the permit states that the permit and all authority granted under it are specifically subordinated, as to priority of time, to all present and future rights to use the waters of the San Marcos River for any authorized purpose.

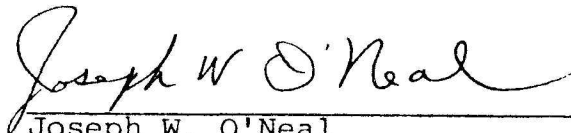
Field inspection of the dam by the staff of the Executive Director indicates that the structure (even with the flashboards in place two feet above the top of the dam) is of low hazard potential, i.e., in the event of failure, no loss of life or severe economic losses are expected to occur in the downstream area. The staff did not believe a spillway adequacy or breach analysis was necessary, and noted that the structure appeared to be in good condition. The fact that the dam has been in place and withstood floods over the years is an indication that the dam is structurally sound.

Mr. Tom Goynes has a canoe livery and a campground about one-half mile downstream of the dam on the river. He is concerned about water hyacinths accumulating above the dam and then coming downstream in large clusters which interferes with his canoe business. He would like to see water flowing over the dam at all times to keep the water hyacinths from accumulating.

Dr. Jack E. Fairchild owns land about one-half mile below the dam and opposes any changes to the river. He also felt that the economic potential of the applicant's plant is so small that it does not justify the effect of the plant on the river.

The Texas Parks and Wildlife Department is particularly concerned that portage for canoes, etc., be continued past the dam, that fishing and swimming be continued in the spillway basin below the dam, and that the power project be operated so that the stream flows not be changed below the dam. Mr. Parker stated that on one side of the dam, there is an easy and convenient place where the dam can be crossed carrying canoes. He stated that he would see that there was always a convenient way to portage canoes past the dam.

After a review of the record, the Examiner proposes that the Texas Water Commission approve Application No. 4492, as set out in the attached Order and permit draft, to maintain a dam and reservoir on the San Marcos River and to impound therein not to exceed 30 acre-feet of water at a level not to exceed what would be caused by the existing concrete crest (501.4 feet above msl) of the dam, and to generate hydroelectric power using water from the reservoir at a diversion rate not to exceed 122 cubic feet per second.

  
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Joseph W. O'Neal  
Hearings Examiner  
Texas Water Commission