

Pipeline Construction in Sensitive Areas: El Paso's Kofa National Wildlife Refuge Experience

by James F. George

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In order to meet the increasing demand for natural gas in the state of California, El Paso Natural Gas Company constructed a 13-mile loop pipeline of 30-inch O.D. (outside diameter) across the Kofa National Wildlife Refuge, located in

western Arizona, in late 1990. This article describes the regulatory hurdles that El Paso encountered for approval of the construction through that environmentally sensitive area, and how those hurdles were accommodated.

INTRODUCTION

If you were going to construct a pipeline, it would be hard to imagine a route more difficult than through a national wildlife refuge. When El Paso constructed its original 24-inch natural gas pipeline westward to California in 1946, the route went through what then was known as the Kofa Game Range, located approximately 100 miles west of Phoenix, in Yuma County, Arizona, and managed by the Bureau of Land Management (BLM). This game range, located in an area characterized by long hot summers, short mild winters and only three to eight inches of rainfall per year, was created by executive order of President Franklin D. Roosevelt in 1939 to protect the desert bighorn sheep and their habitat, as well as to protect the animals during their annual migration between the lambing grounds in the New Water and Plomosa Mountains located north of the pipeline, and the Kofa Mountains located to the south. The bighorn sheep population was down to less than 150 animals before the refuge was established, but the population has grown to over 600 animals at the present time and serves as a source of animals for transplanting to other areas. Bighorn sheep hunting, by permit, has been allowed on the refuge since 1960. The Kofa Game Range was renamed the Kofa National Wildlife Refuge in 1978 after it

was placed under the jurisdiction of the U.S. Fish and Wildlife Service two years earlier. Livestock grazing and wild burros were removed from the refuge in 1981 to further protect the bighorn sheep habitat.

No records exist of the environmental requirements El Paso had to meet when the original pipeline was constructed in 1946, but it's a new ball game today. The environmental conditions placed on El Paso for the installation of a 13-mile loop of 30-inch O.D. pipeline on the Kofa Refuge in 1990 were considerable. Some of those requirements will be discussed here.

PROJECT HISTORY

A right of way across the refuge was granted to El Paso in 1970, but that right-of-way grant expired in 1975 because construction never took place. In 1976, El Paso applied for 24.9 miles of new right of way through the refuge, but that project was abandoned in 1979, and never constructed. On May 30, 1989, El Paso submitted an application for public convenience and necessity to the Federal Energy Regulatory Commission (FERC) for the expansion of its California Mainline system to carry up to 200 mmcf/d (million cubic feet per day) of additional gas to California's Southern California Gas Company. That application included the 13-mile loop pipeline within the

refuge for which El Paso applied to the Fish and Wildlife Service for a permit for 15 feet of new, permanent right of way within the refuge. That permit across the Kofa National Wildlife Refuge required Congressional approval, which was obtained the next year.

ENVIRONMENTAL REQUIREMENTS

In January of 1990, an environmental assessment prepared for the project by El Paso's Environmental Affairs Department (EAD) was submitted to the Fish and Wildlife Service (a similar document was submitted to FERC as part of the application). As part of the environmental analysis conducted for the project, a consulting firm from Tempe, Arizona, conducted an archaeological survey of the proposed right of way, with no cultural resources discovered. El Paso subsequently received archaeological clearance, or concurrence that the project would not adversely impact cultural resources, from the Arizona historic preservation officer and FERC. El Paso consulted with the Fish and Wildlife Service Office of Ecological Services in Phoenix, who requested that surveys be conducted for threatened or endangered plants as well as the Sonoran desert population of the desert tortoise, which is a candidate species for federal threatened or endangered status. Those surveys were conducted in March 1990, without any sensitive plants or desert tortoises found.

In February, the Arizona Commission of Agriculture and Horticulture had conducted an inventory of the right of way for plants protected under the Arizona Native Plant Law, such as various species of cactus, so they could be moved off the area to be disturbed during pipeline construction. The Fish and Wildlife Service later increased the number of



plants to be moved, resulting in El Paso paying over \$123,000 to have approximately 3,300 individual plants transplanted off the right of way.

In response to FERC requirements, El Paso contracted with a consultant for the preparation of an erosion control plan. This plan, which involved consulting with the Fish and Wildlife Service, the BLM and the local office of the Soil Conservation Service, explained how El Paso would control soil erosion on the right of way during and after construction, so soil loss due to erosion would not exceed allowable amounts. That plan was submitted to the Fish and Wildlife Service regional office in Albuquerque, New Mexico and to FERC in April.

In April, the Fish and Wildlife Service Office of Ecological Services agreed the project would not adversely affect any threatened or endangered plant species. However, despite the fact that no desert tortoises, burrows or their sign were found during the survey, they required that El Paso have a wildlife biologist on location during construction as a tortoise monitor. The biologist, a consultant, was instructed to examine the open trench each morning for desert tortoises that may have fallen in since the day before, and to move any desert tortoises found during construction off the right of way. An educational program was held for all construction workers to ensure they were aware of proper procedures if a tortoise was encountered. It should be noted that no desert tortoises were seen during the entire project.

Additional work conducted by El Paso prior to construction included a

geologic study for potentially unstable slopes that resulted in the re-alignment of a 2,000-foot section of the pipeline 20 feet to the north, to remove potential for slope instability problems that could result in the integrity of the pipeline being endangered by erosion.

In order to hydrostatically test the new pipe to ensure there were no leaks, it was necessary for El Paso to acquire enough water to fill the pipe. Alternatives examined by El Paso included trucking the water from a well located several miles north of the route, laying a temporary surface pipeline from the well alongside the road into the area, and trucking or laying a surface pipeline to bring the water in from an aqueduct from the Colorado River located about 15 miles from the right of way. The refuge had an existing windmill only a couple of miles from the project site, but it had not been in use for several years. El Paso provided the labor to install a pump at the well, provided three metal tanks for water storage for use by the refuge, and also purchased a windmill motor for use by the Fish and Wildlife Service at another refuge in the state. Water from the windmill was hauled by trucks the short distance to the eastern end of the new pipeline and stored in a lined pond. This water was used to control dust during construction as well as for the hydrostatic test of the new pipe. After the hydrostatic test, the used water was disposed of in another pond constructed at the western end of the new pipeline loop, in accordance with regulations of the Arizona Department of Environmental Quality.

El Paso installed a new cattle guard on the road alongside the pipeline right of way, requested by the refuge to help in correcting a problem with people leaving the old gate

Continued on Page 14



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