CHILDS-IRVING HYDROELECTRIC PROJECT,
CHILDS SYSTEM: FLUME INTAKE AND FOREBAY
Forest Service Road 708/502
Camp Verde vicinity
Yavapai County
Arizona

HAER NO. AZ-65-I

HAER
AZ-65-I

NOTE: Elements of the Childs-Irving Hydroelectric Project are located in both Yavapai and Gila Counties. For shelving purposes at the Library of Congress; Yavapai County was selected as the official location for this project.

PHOTOGRAPHS

WRITTEN HISTORICAL AND DESCRIPTIVE DATA

FIELD RECORDS

HISTORIC AMERICAN ENGINEERING RECORD

CHILDS-IRVING HYDROELECTRIC PROJECT, CHILDS SYSTEM: FLUME INTAKE AND FOREBAY

HAER No. AZ-65-I

Location:	Childs Station No. 0+00. Forest Service Road 708/502, Camp Verde Vicinity, Yavapai County, Arizona. USGS Payson Quadrangle, UTM Coordinates: NAD 27 Zone 12 443230.4145E - 3806738.551N.
Date of Construction:	1908; 1916.
Engineer:	Iva Tutt; Francis S. Vielé; Raymond S. Masson.
Present Owner:	Arizona Public Service (improvements), P.O. Box 53933, M.S. 3190, Phoenix, AZ 85072-3933; U.S. Government, U.S.D.A. Forest Service (land).
Present Use:	Hydroelectric power generation (November 2004).
Significance:	The Flume Intake and Forebay contain features of the original Childs System and alterations with addition of the Irving System in 1915-1916. This complex structure directed and filtered water directly from Fossil Creek, or water leaving the Irving Powerhouse, into the beginning of the Childs flume system.
Historian:	James W. Steely, November 2004.

Project Information:

Between February and November 2004, Arizona Public Service (APS) and SWCA Environmental Consultants documented the hydroelectric complex, under guidance of the Historic American Engineering Record (HAER). Project managers Phil Smithers (APS) and Linda Martin (SWCA) coordinated historian Steely, photographer Jessica Maggio, and draftsman Hanson Todachine to complete the HAER documentation. Archives for the Childs-Irving Hydroelectric Project are at APS in Phoenix, Arizona.

Historic and Engineering Context:

The Childs-Irving Hydroelectric Project encompassed a unique water-pressure/electric-turbine system—according to engineering historians evaluating the historic complex since 1976—that 1) was constructed with great effort in an extremely remote landscape, 2) captured a natural water source and followed dramatic topography, 3) generated electric power in a remarkably simple and efficient manner, and 4) operated continuously for 95 years.

In addition to its individual significance nationwide, the Childs-Irving Hydroelectric Project is a classic part of Arizona history spanning the 20th century: remote low-grade mining operations sought reliable and less-expensive energy; a combination of investors, entrepreneurs and engineers modified a natural resource to supply the energy; cutting-edge technology entered a harsh and remote landscape; an isolated labor force merged those with skills learned far away with local residents, including Native Americans with traditional ties to the land; nearby communities soon offered an additional customer base; farmers and irrigation cooperatives became major consumers for their pumps and agricultural machinery; distant metropolitan areas boomed by tapping the energy source; and finally a conservative operational approach to investment and maintenance retained aging technology within a huge modern power grid for many, many years past a reasonable retirement.

Character Defining Attributes

Component/Feature No. 18 on National Register form. A small dam on Fossil Creek included a sluice gate and sluiceway cut into the dam's spillway at its lower end. At the lower end was a sandbox with an iron-bar grizzly and spill gate to admit water into the flume. When the Irving plant was built in 1915, the flume intake was modified to accept water diverted through the Irving Powerhouse. The accepting forebay with two spill gates incorporated the original intake ditch of the Childs flume to allow direct diversion of water from Fossil Creek when the Irving system is closed for repairs. One spill gate controlled water flowing into the Childs flume; the second gate allowed discharge of water from the forebay and back into Fossil Creek, to maintain the water level within the forebay or to divert water from the Childs flume when necessary. A part of the concrete flume discharge was replaced c. 1990 with metal. (Effland and Macnider 1991)

Bibliography

Arizona Public Service (APS) Archives

Historic photograph collection. Historic drawings collection. Historic documents collection. Available through appointment at: APS, P.O. Box 53933, M.S. 3190, Phoenix, Arizona 85072-3933, 602-371-7689.

Effland, Richard W., Jr., and Barbara S. Macnider

1991 *Childs-Irving Hydroelectric Facilities.* National Register of Historic Places Registration Form. U.S. Department of the Interior, National Park Service. Washington, D.C.

Neal, Lynn, and Linda Martin

2003 *Childs/Irving Hydroelectric Decommissioning Project, Historic Properties Management Plan* (HPMP). Prepared for APS/Generation Engineering. SWCA Environmental Consultants. Flagstaff.

Drawing "Childs Flume Forebay Area & and Intake Ditch" c. 1916: