m No. 10-300 ' REV. (9/77)

UNITED STATES DEPARTMENT OF THE INTERIOR NATIONAL PARK SERVICE

IATIONAL REGISTER OF HISTORIC PLACES INVENTORY -- NOMINATION FORM

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OCT 2 4 1978 2 3 1979 RECEIVED

DATE ENTERED

SEE INSTRUCTIONS IN HOW TO COMPLETE NATIONAL REGISTER FORMS **TYPE ALL ENTRIES -- COMPLETE APPLICABLE SECTIONS**

1 NAME

No. 223

HISTORIC #229 Grant Narrow Gauge Steam Locomotive, -D&RG Class 60N, 2=8=0

AND/OR COMMON

2 LOCATION

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	SITE	PUBLIC ACQUISITION	ACCESSIBLE	ENTERTAINMENT	RELIGIOUS
<u>.</u>	OBJECT	IN PROCESS	XYES: RESTRICTED	GOVERNMENT	SCIENTIFIC
		BEING CONSIDERED	YES: UNRESTRICTED	INDUSTRIAL	TRANSPORTATION
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EXCELLENT GOOD _XFAIR	DETERIORATED RUINS UNEXPOSED	XUNALTERED	ORIGINAL X_MOVED	site date_July_1941

DESCRIBE THE PRESENT AND ORIGINAL (IF KNOWN) PHYSICAL APPEARANCE

Description of Locomotive:

The #223 Grant steam locomotive, a consolidation type 2-8-0, class C-16-60 engine originally had the following dimensions and specifications: cylinder size 15" x 20", 36" drive wheel diameter, engine weight 60,000 lbs., tractive effort 16,540 lbs. and Grant construction number of #1436-1881.

This coal-fired steam locomotive was built as number 223 in a series of engines beginning with #200 and ending with #227. It was a class 60-N locomotive and was classed by the Denver & Rio Grande Railroad as a C-16-60 N. The N catagory indicates that the locomotive had an extended smoke box and a larger tender than the 60 series.

The consolidation series of 2-8-0 locomotives saw their first heavy usage as freight haulers in the Pennsylvania coal fields. These were identical to the Baldwin and Grant class 60 series engines later brought to Utah and Colorado to serve the D&RG Railroad. The D&RG purchased the vast majority of its locomotives from the Baldwin Locomotive Works. It is speculated that Baldwin was unable to supply enough of the 2-8-0 locomotives to the D&RG which resulted in the Grant Locomotive Works receiving a contract to produce near identical engines from the Baldwin plans. Grant was awarded a contract in 1881 to build locomotives #200 to #227. The last engines produced under this order were #222, and #224-227. This series of twenty-seven locomotives were the only non-Baldwin locomotives to see service on the D&RG Road. The Grant Locomotive Works ceased operation in 1890.

The #223 Grant locomotive has seen numerous modifications from the period extending from 1914 to 1941 when it was retired from service.

Equipment Modifications:

The front pilot (cow catcher) was originally wood extending out from its mounts 4'8-3/8". It was replaced with a steel pilot which was approximately 3'0" long in order to accomodate the new automatic coupler first introduced in 1903. The valve gear, cylinders, pilot wheels and drive wheels remain as original with no visible changes. The original smokestack had been connected to a diamond-shaped spark arrester. The diamond-shaped spark arrester was replaced just after the turn of the century due to poor exhaust characteristics. It was replaced with a longer vertical stack with a drum-shaped spark arrester on top. This stack remains inside the current diamond stack which is on the engine now. This diamond stack is purely decorative, probably installed on the engine in 1941 and bears no resemblance to the original.

The headlight is Kerosene-fired in the original style and shape. It is doubtful that it is the original, since the engine carried a smaller electric head lamp which replaced the original one after the turn of the century. Flanking the headlight and attached to the smoke box sides were two classification lamps, which originally identified the disposition of the train. Green lenses signified that the engine pulled a freight, while white or clear lenses indicated a special. The engine number was displayed on either side of the main headlight with numbers illuminated by the head lamp.

The boiler is believed to have been replaced at some unknown date. The letter N in the 60N classification indicates that the locomotive came from the factory with an

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extended front smoke box. The smoke box is a round cylinder which forms the front nose of the engine. The box resembles part of the boiler, but attaches just ahead of it. The smoke travels from the fire box through the boiler tubes, into the smoke box and up and out of the smoke stack which attaches on top of the smoke box. The purpose of the extended smoke box was to improve the flow of gases, through and out of the engine and also served to collect ashes, cinders and further arrest sparks. The smoke box is currently painted silver. Originally, the smoke box had a silvery polished finish resembling stove black.

The boiler appears to be the same overall shape and size as the original, and shows no signs of having its outer metal jacket rusted out. Originally, the engines came from the factory with air pumps mounted on the engineer's side of the boiler, just ahead of the cab. These pumps compressed air to power the air brakes on the train. These pumps have been relocated on the fireman's side. Looking forward from the cab of the engine, the engineer operates the engine on the right side of the boiler, with the fireman on the left. The engine cab is intact and in relatively good repair considering its exposure to the weather since 1941. The cab is roughly square with an arched roof. Some Baldwin engines of the same design had pitched roofs with a ridge line down the center extending from front to rear. The cab appears to be oak. All of the windows and window locations on the front and sides of the cab are original. The sides of the cab have been sheathed in sheet metal which, when removed, should expose the original locations of lettering and numbering, as well as the exact colors used on the engine and cab. The lettering is known to have originally been yellow or gold with pin striping.

All of the original pressure gauges and equipment appear to be intact within the engine cab. The all-weather curtains which could be drawn around the rear open portion of the cab are missing.

The tender is in original condition with all equipment intact except for a missing air tank which extended in traverse fashion across the rear of the frame. The tender is supported by two large wood beams running the full length of the tender, forming the frame. This wood frame shows serious deterioration at the rear, but is suitable to serve as a pattern.

The overall condition of the engine and tender is good, considering the length of time it has set unattended. The only items which have been stolen from the engine during its stay in the park are the front classification lamps. The engine still retains its original brass bell and steam whistle.

In keeping with National Register requirements for nominations of stationary steam engines, the following data has been included in this description:

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Cylinder bore and stroke - 15 x 20". Horsepower - not applicable, same as tractive effort. R.P.M. - not applicable. Pounds per square inch - 160 pounds. Type of valves and gears - Stephenson valve gear. Type of crosshead guides - Alligator crossheads. Type of connecting rod ends - main rod connects crosshead to drive pins. Type of crank - Stephenson valve gear. Method of drive - direct power to wheels via crank. Flywheel diameter and face - not applicable. Type of condenser - none. Uses of exhaust system - exhaust steam is exhausted out of the stack. Boiler history - originally wrought iron. Between 1910 and 1914 D&RG changed all iron boilers to steel due to explosions on wrought iron boilers. Earlier power sources on site - not applicable.

Description of Location:

At the present time, locomotive #223 is located in a city-owned park. The engine has been in the park for the past 36 years, between a children's aviary and the site of an old mill. In spite of the chain link fence which surrounds it, it has been vandalized (lights and builders plate have been removed). This is obviously not a location suitable for a locomotive on the National Register. The Utah State Historical Society proposes that the engine shall be placed in a more suitable location to meet the criteria of the National Register. The Society plans to move the locomotive by trailer to the Denver and Rio Grande Depot in Salt Lake City, where it can be protected, restored and displayed. The State Historical Society is in the process of restoring the D&RG Depot to serve as a multi-functional center housing a state museum, meeting areas, Historical Society offices, library and other functions. The Historical Society feels that the D&RG Depot would be a highly appropriate setting for the D&RG locomotive. This setting would allow for better protection of #223 while enabling a greater number of visitors to see the engine. The State Historical Society will notify the National Register Office when the move is completed.

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Plans are to move Locomotive 223 to the Denver and Rio Grande Depot sometime in 1980. The Locomotive has been given to the Utah State Historical Society. The Denver and Rio Grande Depot will become a permanent home for the Utah State Historical Society in early 1980. Locomotive 223 will be restored and become a permanent museum object at the Depot. The present setting in Liberty Park is greatly out of character with the history of the Locomotive. The new setting, on tracks just west of the Denver and Rio Grande Depot where Locomotive 223 ran during its days of activity, will greatly enhance the historical integrity of the Locomotive.

The verbal boundary description for the new location is best described as immediately west and adjacent to the Denver and Rio Grande Depot, which has been listed in the National Register of Historic Places. UIM references for the new location are 12/423665/ 4512620.

8 SIGNIFICANCE

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AGRICULTURE	ECONOMICS	LITERATURE	SCULPTURE
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SPECIFIC DATES 1881

BUILDER/ARCHITECT Grant Locomotive Works

STATEMENT OF SIGNIFICANCE

Locomotive engine #223 played a significant role in the development of the steam locomotive in the intermountain west. This engine was built in 1881 for the Denver and Rio Grande Railroad. It is the last of the narrow gauge type engines to be built by the Grant Locomotive Works for the Denver & Rio Grande Railroad. After 1882, production of all narrow gauge locomotives for the D&RG was halted. Engine #223 was part of a series of engines which were unique. They were the only locomotives not built by the Baldwin Locomotive Works to be in service on the D&RG rails up until the end of the 19th Century. Number 223 is the only Grant-built narrow gauge locomotive of this type in existence today. It is particularly significant that this engine is in Utah, since it is the only remaining narrow gauge of its type which saw freight service in Utah. Because of this fact, we feel that Engine #223 should be properly recognized as the only survivor of a species which has been extinct for almost 100 years.

History

Engine #223 has a colorful history which spans two centuries. It was in operation over 60 years and saw service in both Utah and Colorado. From 1881 to 1890 it was used for freight service in Utah. It was then moved to Colorado and continued in freight service until 1941. On July 24, 1941, the Denver & Rio Grande Railroad leased the engine to Salt Lake City for display purposes in city-owned Liberty Park. In 1952, the engine was formally given to Salt Lake City by the railroad. It has stood in Liberty Park for the past 37 years and is now in a state of disrepair.

When the Denver & Rio Grande Railroad was incorporated on October 27, 1870, General William J. Palmer was its president. General Palmer, of Colorado Springs, was determined to break out of the mold adhered to by the great majority of railroads. He decided not to follow their pattern of connecting similar regions in different stages of development, depending on westbound manufactured goods and eastbound raw materials and foodstuffs for business. Instead, Palmer designed the Denver & Rio Grande to connect points varying in climate, products and needs. The major portion of his traffic was to be local.

General Palmer realized that building a railway south from Denver would not be a simple task. Palmer had been an engineer for the Kansas Pacific Railroad and had studied mining in England. At first his railroad was to run through the gentle grades and meadows which boarded on the great plains. It was only when Palmer contemplated the Rocky Mountains and decided to conquer them that his railroad grew in stature.

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IOGEOGRAPHICAL DATA NEW LOCATION Quad. Salt ACREAGE OF NOMINATED PROPERTY less than one 12/432665/4512620 QUADRANGLE NAME Sugarhouse, Utah (current location) RANGI UTM REFERENCES 12/432665/4512620	(new UIM Ref.)
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11 FORM PREPARED BY NAME/TITLE Larry Jones, Architectural Consultant, Lois Harris, Historian ORGANIZATION Utah State Historical Society	
	PHONE -533-6017
CITY OR TOWN STATES Salt Lake City Uta	TE
12 STATE HISTORIC PRESERVATION OFFICER CERTIFIC THE EVALUATED SIGNIFICANCE OF THIS PROPERTY WITHIN THE STATE NATIONAL_X STATE LOCA	이 같은 것 같은 것 같은 것 같아요.
As the designated State Historic Preservation Officer for the National Historic Preservation Act of hereby nominate this property for inclusion in the National Register and certify that it has been criteria and procedules set forth by the National Park Service. STATE HISTORIA PRESERVATION OFFICER SUCCEASES	n evaluated according to the
TITLE Executive Director and State HIstoric Preservation Officer FOR NPS USE ONLY I HEREBY CERTIFY THAT THIS PROPERTY IS INCLUDED IN THE NATIONAL REGISTER	^E Sept. 8, 1978
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ATTEST: ROD Lo Locate DA	re May 21,1929

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Palmer decided that a narrow gauge line, of a 3 foot width instead of the conventional 4 foot 8-1/2 inch track would best suite the terrain. The narrow gauge rails and locomotives were light, to accomodate steeper grades and sharper turns, while carrying a heavy load. Construction of the narrow gauge was also cheaper because trestles and rails were lighter. In addition to these economic and geographic considerations, Palmer may have decided on the three foot gauge for moral reasons. Palmer was a gentleman whose tastes ran along the lines of polo and croquet. He found the general practice of selling two, and not one sleeping space in lower berths distasteful. This practice meant that passengers who were strangers would be forced to sleep in the same berth. It also meant that gentlemen would be sleeping in close proximity of persons of a lower social class. Palmer's narrow gauge cars solved this dilemma since they could not accomodate more than one person in each berth.

Between 1871 and 1873, the D&RG bought 12 locomotives from the Baldwin Locomotive Works. By 1877 the D&RG had begun to operate through Colorado's mountains with 4% grades and 30° curves. A light, more powerful locomotive was needed. Baldwin then produced what was to become the prototype of the narrow gauge for decades to come. The "Alamosa", the first 2-8-0 weighed 34 tons (twice the weight of the original narrow gauge) but was still able to negotiate the D&RG's fragile track. Engine #223 was built in 1881 by the Grant Locomotive Works. It was identical to the previous class 60 locomotives. The Grant locomotives were almost the only non-Baldwin locomotives on the railroad up until the end of the century. It is probably that Baldwin could not produce enough of this class for the D&RG so the identical plans were used by Grant for this engine.

While this expansion was taking place, the railroad "wars" of the late 1870's and early 1880's had left the D&RG short of its southern goal of Santa Fe. The Atchinson, Topeka and Santa Fe Railroad was at war with the D&RG over the southern routes. The D&RG eventually agreed not to build south of Trinidad, Colorado, or Española, New Mexico, while the AT&SF agreed not to build into Denver or Leadville. Palmer then turned his southbound ambitions westward and on August 1, 1882, the Denver & Rio Grande Western Railway which was building a line across Utah was leased to the D&RG. In March 1883, the through line to Salt Lake City was completed by the D&RGW Railroad. That same year Palmer resigned as President of the D&RG, however, he remained as President of the D&RGW.

The days of the narrow gauge were then numbered **J** 1882 the last of the class 60 locomotives were built, most of these being the overflow of the 1881 order. The 1882 engines were the last Grant locomotives ever built for the D&RG. Beginning in 1882, the narrow gauge rails were phased out in favor of the 4'8-1/2" standard gauge. By 1890, the conversion to standard gauge was completed, on the major routes, and engine #223 was transferred from Utah to Colorado. Number 223 ran a freight route in Colorado from 1890 until 1941.

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The D&RG Railroad was the first railroad in North America to carry people and freight on narrow-gauge tracks. It became the largest such carrier with 1,300 miles of track from Denver and Pueblo, Colorado, to Salt Lake City and Ogden, Utah. At the height of its narrow gauge career, it had over 300 locomotives in its service. General Palmer had hoped that his 3 foot gauge would become standard, but the economics of handling freight to and from 4'8-1/2" connections became an obvious handicap, and conversion to standard gauge became a necessity. As the narrow gauge locomotives disappeared from the rails, very few remained in operating condition. Most were dismantled or left to wither away. Engine #223 is the only Grant locomotive of its kind left intact. Two other Baldwin locomotives of its type are on display in Colorado. Salt Lake City is fortunate to possess this locomotive whose history is so much a part of the development of the national railway system and part of the history of the state of Utah.

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Deseret News, January 9, 1907, p. 3

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