

# NORTHERN PACIFIC RAILWAY COMPANY

## AUTHORITY FOR EXPENDITURE

Superintendent's No. \_\_\_\_\_  
No. \_\_\_\_\_

Mech. Dept. No. **2985**  
Engineering Dept. No. \_\_\_\_\_

Year: \_\_\_\_\_

A. F. E. No. **5**

Lake Superior Div.

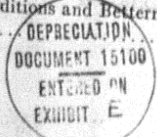
District State Minn. Val. Sec. No. **12**  
Branch \_\_\_\_\_

**AUTHORITY IS REQUESTED FOR A NET EXPENDITURE OF \$ 1 002**

Accounting distribution as follows: (Distribution to be made in General Office.)

	Operating Expenses	Profit and Loss	Net Operating Expenses	Net Profit and Loss
Cost of property retired . . . . .	\$	\$	\$	\$
Value of salvage . . . . .				
Incidental costs . . . . .				
Total to Operating Expenses . . . . .				\$
Total to Profit and Loss . . . . .				\$
To Material and Supplies . . . . .				
To Bills for Collection . . . . .				
To Other Accounts . . . . .				
Net charge to investment account—Additions and Betterments . . . . .				1 002
Total of distribution . . . . .				\$ 1 002

Budget reference: **Not in budget**



Class of Work: No. **21**

Joint facility contract reference: \_\_\_\_\_

The location is \_\_\_\_\_ on this company's property. To secure rights, it will be necessary

Location: **Brainerd Central Welding Plant**

Title **Install seven water seals & five bursting discs in pipe lines.**

Reason: In the operating of oxy-acetylene welding and cutting equipment, a combination of circumstances sometime causes what is known as back-firing or flash-back; that is, the flame from the torch travels back into acetylene supply line. Such flashback is liable to cause explosion in the pipe line and burst it and travel back through the lines to the acetylene generators with consequent liability of disastrous explosion of generators. Fire occurring in buildings through which acetylene pipe lines pass is also liable to produce similar results. When the Central Oxy-Acetylene Welding Plant was installed at Brainerd, no safety devices were installed to protect the pipe lines and generators against flash-back and fire for the reason that at that time no such safety device had been developed. There have now been developed devices known as bursting discs and water seals for application in acetylene distributing lines. These can be used either singly or in combination as may be desired -- the function of the bursting disc being to burst and relieve the pressure in the section of the pipe in which the flashback occurs, and the water seal to confine the flashback to the section of pipe in which it has occurred and prevent its traveling through the entire system and back into the generators.

Work to be done by ~~company force~~ **XXXXXX** under charge of **Shop Superintendent** (OVER)

Accounting to concentrate in the office of **Shop Accountant**

Signature and Title: *[Signature]* **General Mechanical Superintendent** Date **December 26th, 19 24.**

APPROVED:

General Superintendent.	Prin. Asst. Engr. or Engr. Maint. of Way.	Assistant General Manager.
Mech. Supt., Supt. Telgh. or Signal Engr.		
Chief Engineer.	General Manager.	<i>[Signature]</i> Vice President.
For Comptroller.	President.	Date of Final Approval } <b>JAN 10 1925</b> 19

COMPTROLLER'S RECORD OF NOTICE OF APPROVAL AND OF COMPLETION

Form No. 1345 issued \_\_\_\_\_ 19 \_\_\_\_\_ Work begun \_\_\_\_\_ 19 \_\_\_\_\_ Work finished April 22 19 25

Bursting discs and water seals should be located at such points in the distribution system as will confine the disturbance caused by flashback or fire to a reasonably small portion of the system.

Proper installation is indicated on print of Drawing 23450-A attached.

These devices were applied in the Livingston Plant recently installed.

As this is a safety measure, the saving cannot be determined in dollars and cents.