INTERSTATE COMMERCE COMMISSION

WASHINGTON

REPORT NO. 3650

NORTHERN PACIFIC RAILWAY COMPANY

IN RE ACCIDENT

AT CHENEY, WASH., ON

AUGUST 15, 1955

SUMMARY

Date:	August 18, 1955	
Railroad:	Northern Pacific	
Location:	Cheney, Wash.	
Kind of accident:	Head-end collision	
Trains involved:	Freight	: Passenger
Train numbers:	Extra 5119 East	: 5
Locomotive numbers:	5119	: Diesel-electric units 6500C, 6500B, and 6500A
Consists:	17 cars, caboose	: 8 cars
Estimated speeds:	2 m. p. h. in backward motion	: 35-45 m. p. h.
Operation:	Timetable, train orders, and automatic block-signal system; yard limits	
Track:	Single; 2° curve; level	
Weather:	Clear	
Time:	7:45 a. m.	
Casualties:	2 killed; 26 injured	
Cause:	Train fouling main track on time of opposing superior train without adequate protection	

INTERSTATE COMMERCE COMMISSION

REPORT NO. 3650

IN THE MATTER OF MAKING ACCIDENT INVESTIGATION REPORTS UNDER THE ACCIDENT REPORTS ACT OF MAY 6, 1910.

NORTHERN PACIFIC RAILWAY COMPANY

October 3, 1955

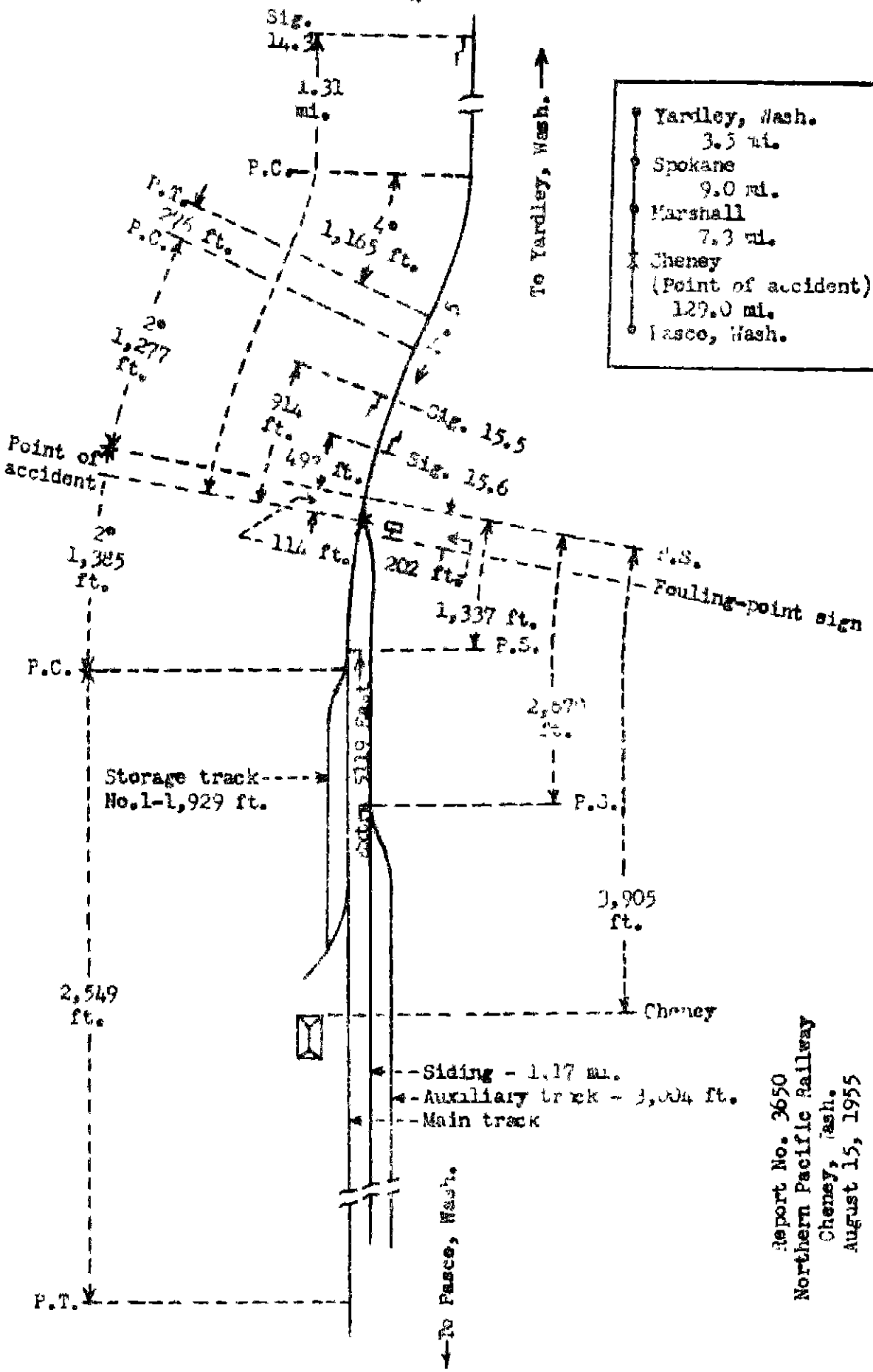
Accident at Cheney, Wash., on August 15, 1955, caused by a train fouling the main track on the time of an opposing superior train without adequate protection.

REPORT OF THE COMMISSION[1]

CLARKE, Commissioner:

On August 15, 1955, there was a head-end collision between a freight train and a passenger train on the Northern Pacific Railway at Cheney, Wash., which resulted in the death of 1 passenger and 1 train-service employee, and the injury of 16 passengers, 1 railway mail clerk, 1 express messenger, 1 dining-car employee, 2 business-car porters, 1 roadmaster, and 4 train-service employees. This accident was investigated in conjunction with representatives of the Washington Public Service Commission.

[1] Under authority of section 17 (2) of the Interstate Commerce Act the above-entitled proceeding was referred by the Commission to Commissioner Clarke for consideration and disposition.



Report No. 3650
Northern Pacific Railway
Cheney, Wash.
August 15, 1955

Location of Accident and Method of Operation

This accident occurred on that part of the Idaho Division extending between Pasco and Yardley, Wash., 148.8 miles. In the vicinity of the point of accident this is a single-track line, over which trains are operated by time-table, train orders, and an automatic block-signal system. At Cheney, 129.0 miles east of Pasco, a siding 1.17 miles in length parallels the main track on the south. The east switch of the siding is 3,905 feet east of the station. An auxiliary track 3,004 feet in length parallels the siding on the south. The east switch of this track is 2,670 feet west of the east siding-switch. An auxiliary track designated as storage track No. 1 parallels the main track on the north. It is 1,929 feet in length, and the east switch is located in the main track 1,337 feet west of the east siding-switch. Yard limits extend between points 1.4 miles west and 4,673 feet east of the east siding-switch. The accident occurred on the siding at a point 114 feet west of the east siding-switch. From the west on the main track there is a tangent 2,549 feet in length and a 2° curve to the right 1,385 feet to the east siding-switch. From the east there are, in succession, a 4° curve to the right 1,165 feet in length, a tangent 276 feet, and a 2° curve to the left 1,277 feet to the east siding-switch. Throughout a distance of approximately 4,000 feet immediately east of the point of accident the grade varies between 0.50 percent and 0.65 percent ascending westward, and at the point of accident it is practically level.

A fouling-point sign is located adjacent to the siding at a point 202 feet west of the east siding-switch.

The switch stand at the east end of the siding is of the intermediate-stand horizontal-throw type. It is located on the north side of the track. When the switch is lined for entry to the siding a circular red target 18 inches in diameter is displayed at right angles to the track. The center of the target is approximately 5 feet 3 inches above the tops of the ties.

Immediately east of the siding the track is laid in a rock cut approximately 225 feet in length. The walls of this cut rise to a height of about 9 feet 6 inches above the level of the tops of the ties.

Automatic signal 15.6, governing east-bound movements, is located 607 feet east of the point of accident and 493 feet east of the east siding-switch. Automatic signals 14.3 and 15.5, governing west-bound movements, are located, respectively, 1.31 miles and 914 feet east of the point of accident. These signals are of the one-arm upper-quadrant semaphore type. Signals 14.3 and 15.5 are each equipped with a permissive marker, which consists of a yellow metallic plate attached to the mast and to the right of the number plate, as viewed from an approaching train. The aspects applicable to this investigation and the corresponding indications and names are as follows:

Signal	Aspect	Indication	Name
15.6	Horizontal over number plate	Stop, then proceed at restricted speed.	Stop and proceed signal.
14.3	Vertical	Proceed.	Clear signal.
15.5	Horizontal over permissive marker	Proceed at restricted speed without stopping.	Permissive signal.

The controlling circuits of the automatic block-signal system are arranged to permit following movements between stations and to provide station-to-station protection for opposing movements. When a west-bound train enters the block at a point 5.84 miles east of the point of accident, signal 15.6 indicates Stop-then-proceed-at-restricted-speed. When a train occupies any portion of the block of signal 15.6, including occupancy of the shunt fouling circuit at the east end of the siding, or if the east siding-switch or the east switch of storage track No. 1 is in other than position for movement on the main track, signal 14.3 indicates Approach and signal 15.5 indicates Proceed-at-restricted-speed-without-stopping. The shunt fouling circuit on the siding extends to a point 179 feet west of the east siding-switch.

This carrier's operating rules read in part as follows:

34. All members of train and engine crews must, when practicable, communicate to each other by its name, the indication of each signal affecting the movement of their train or engine.

35. The following signals will be used by flagmen:

Day signals--A red flag,
Torpedoes and Fusees.

* * *

73. Extra trains are inferior to regular trains.

S-87. An inferior train must keep out of the way of opposing superior trains and failing to clear the main track by the time required by rule must be protected as prescribed by Rule 99.

Extra trains must clear the time of opposing regular trains by not less than five minutes unless otherwise provided * * *

93. Within yard limits the main track may be used, clearing first class trains when due to leave the last station where time is shown. In case of failure to clear the main track, protection must be given as prescribed by Rule 99.

* * *

99. When a train stops under circumstances in which it may be overtaken by another train, the flagman must go back immediately with flagman's signals a sufficient distance to insure full protection * * *

* * *

The front of the train must be protected in the same way when necessary by the forward brakeman, fireman, or other competent employe.

* * *

505. Block signals * * * govern the use of blocks, but, unless otherwise provided, do not supersede the superiority of trains; nor dispense with the use or the observance of other signals whenever and wherever they may be required.

509 (B). When a train is stopped by a Stop and proceed indication, it may proceed:

On any track signaled for traffic in both directions, at restricted speed through the entire block. Where the Stop and proceed signal is located at the leaving end of a siding, the Stop-indication may be due to an opposing train proceeding in the same block on an Approach-signal indication and every precaution consistent with train rights and the track ahead should be taken before proceeding * * *

* * *

513. Unless otherwise provided, before a train or engine enters on or fouls a main track * * * it must wait three minutes after any bolt-locked switch, derail or other switch connected with the movement has been operated to affect the signal indications. * * * This will not relieve employes from the duty of promptly and properly protecting the movement.

519. After passing a signal displaying a proceed indication, the indication of the next signal may change to stop and enginemen and trainmen must be on the alert to observe it.

Timetable special instructions read in part as follows:

> Where automatic block and interlocking rules and signal indications require movement at restricted speed, such movement must be made prepared to stop short of train, obstruction or switch not properly lined and be on lookout for broken rail or anything that may require the speed of a train to be reduced but a speed of 15 MPH must not be exceeded.

The maximum authorized speed for passenger trains is 60 miles per hour, but it is restricted to 45 miles per hour in the vicinity of the point of accident.

Description of Accident

Extra 5119 East, an east-bound freight train, consisted of engine 5119, a steam locomotive, 42 cars, and a caboose. This train departed from Pasco at 1:50 a. m., arrived at Cheney at 7:20 a. m., backed in on the siding, and cleared the main track. The first 25 cars were set off on the auxiliary track south of the siding, and the locomotive was re-coupled to the train. During these operations a member of the train crew received copies of a message from the train dispatcher reading as follows:

> PUT YOUR TRAIN ON TRACK NO 1 AS I HAVE TO USE SIDING FOR SECOND 2

The train then proceeded eastward and was stopped in the vicinity of the clearance point at the east end of the siding. After the east siding-switch was lined for movement to the main track, the train again moved eastward. When the front end of the locomotive was closely approaching the frog at the east siding-switch the eastward movement was stopped. A reverse movement was then started. The train had moved westward an estimated distance of from 10 to 20 feet when the locomotive was struck by No. 5.

No. 5, a west-bound first-class passenger train, consisted of Diesel-electric units 6500C, 6500B, and 6500A, coupled in multiple-unit control, two mail-express cars, two baggage cars, two coaches, one dining car, and one business car, in the order named. The third and the seventh cars were of steel-underframe construction, and the other cars were of all-steel construction. The Diesel-electric units and the rear car were equipped with tightlock couplers. This train departed from Spokane, 16.3 miles east of Cheney, at 7:25 a. m., on time, passed Marshall, 7.3 miles east of Cheney and the last open office, at 7:37 a. m., 2 minutes late, passed signal 15.5, which indicated Proceed-at-restricted-speed-without-stopping, and while moving at a speed variously estimated as from 35 to 45 miles per hour it was diverted to the siding at the east siding-switch at Cheney and collided with Extra 5119 East at a point 114 feet east of the switch.

Extra 5119 East was moved westward a distance of 94 feet by the force of the impact. No equipment of this train was derailed. The front end of the locomotive was badly damaged, and the first car was somewhat damaged. The Diesel-electric units and the front truck of the first car of No. 5 were derailed. Separations occurred between the Diesel-electric units and between the seventh and the eighth cars. The first Diesel-electric unit stopped with the rear end on the track structure of the main track opposite the point of collision. This unit was at an angle of about 45 degrees to the track, with the front end toward the southeast. It leaned toward the south at an angle of about 30 degrees. The control compartment was torn from the front end. The second Diesel-electric unit stopped with the front end approximately 25 feet west of the point of collision and 30 feet north of the main track, and the rear end on the track structure of the main track. The third Diesel-electric unit stopped upright and in line with the track. The Diesel-electric units were badly damaged, the first car was somewhat damaged, and the other cars were slightly damaged.

The engineer of No. 5 was killed. The fireman, the conductor, the front brakeman, and the flagman of No. 5 were injured.

The weather was clear at the time of the accident, which occurred about 7:45 a. m.

Engine 5119 is of the 4-6-6-4 single-expansion articulated type. The total length of the engine and tender is 127 feet 3 inches.

Discussion

After Extra 5119 East arrived at Cheney the train dispatcher told the operator to inform the crew that Second 2, an east-bound first-class train, would take the siding at Cheney to meet a west-bound extra train. No. 2 is due to leave Cheney at 7:46 a. m. The operator then wrote the message instructing the crew of Extra 5119 East to move the train from the siding to storage track No. 1. He gave the message to the flagman, and the flagman proceeded to the locomotive and gave it to the conductor. At this time the cars had been set off and the locomotive had been re-coupled to the train. The conductor delivered the message to the engineer and informed him that storage track No. 1 was clear. Soon afterward the train proceeded eastward. The members of the crew said that there was no discussion of the message before the movement was started.

As this train moved eastward on the siding the enginemen and the swing brakeman were on the locomotive. The conductor and the flagman were on cars near the middle of the train. The front brakeman had remained in the vicinity of the east siding-switch after the train first entered the siding. The swing brakeman alighted from the locomotive as it passed the derail near the east end of storage track No. 1. He said he immediately lined the derail and the switch for entry to that track. The conductor and the flagman alighted from the south side of the train at a point approximately opposite this switch. These employees said that when they alighted the switch had already been lined for entry to storage track No. 1. The conductor said that after he alighted he looked at his watch and the time was then 7:34 a. m. No. 5 was due to leave Marshall, the first station

east of Cheney, at 7:35 a. m. During the eastward movement on the siding the fireman informed the engineer that No. 5 was then due to leave Marshall. As the train approached the east siding-switch the engineer sounded four short blasts of the whistle as a signal for the front brakeman to line the switch for movement to the main track. The engineer then observed that signal 15.6 indicated Stop-then-proceed-at-restricted-speed and that the semaphore blade of signal 15.5 was moving to horizontal position. He assumed that signal 15.5 had been actuated when the switch was lined for movement to storage track No. 1. He said he was under the impression that he had been instructed to clear the siding because Second 2 would use the siding to meet No. 5, and he thought that protection for the movement of his train from the siding to storage track No. 1 would be provided by the restrictive indication of signal 15.5. The front brakeman did not line the switch in response to the engineer's signals, and the engineer stopped the train with the front of the locomotive near the fouling-point sign. He told the brakeman that he had received instructions to move the train from the siding to storage track No. 1 and that the movement was to be made before the arrival of No. 5. The front brakeman then lined the switch. After the eastward movement was started the engineer realized that the train would not clear between the east siding-switch and signal 15.6. He stopped the train with the front end of the locomotive in the vicinity of the frog. He then released the brakes and started a reverse movement. He said that No. 5 came into view immediately after the reverse movement was started, and he thought that his train had moved westward a distance of from 10 to 20 feet when the collision occurred. The front brakeman said that at the time the engine-whistle signal was sounded he saw that signal 15.6 indicated Stop-then-proceed-at-restricted-speed, and for this reason he did not operate the switch in response to the whistle signal. He indicated to the engineer that No. 5 was approaching, and when the train stopped he proceeded to the cab of the locomotive. When the engineer told him of the instructions which had been received, he inquired whether the movement was to be made

before the arrival of No. 5. The engineer replied in the affirmative and instructed him to line the switch. The front brakeman said he assumed from this that authority for the movement had been received. He then lined the switch for movement to the main track and proceeded eastward to provide protection. When No. 5 came into view he ran eastward and gave stop signals. The front brakeman had reached a point approximately 225 feet east of the switch when the locomotive of No. 5 passed him. He said that he observed no indications of braking action on the wheels of the equipment as it passed.

As No. 5 was approaching the point where the accident occurred the enginemen and a roadmaster, who was making an inspection trip over the territory, were maintaining a lookout ahead from the control compartment at the front of the locomotive. The conductor and the front brakeman were in the sixth car, and the flagman was in the seventh car. The brakes of this train had been tested and had functioned properly when used en route. The speed was about 45 miles per hour, as estimated by surviving members of the crew. An approach signal indication and the yellow aspect of a train-order signal at Marshall were called by the enginemen, and the engineer picked up train orders as the train passed that point. The fireman and the roadmaster said that signal 14.3 indicated Proceed. The station whistle signal was sounded as the locomotive was approaching the east yard-limit sign at Cheney. When signal 15.5 became visible to the employees on the locomotive it was displaying its most restrictive aspect. The fireman immediately called the aspect of the signal. The roadmaster estimated that the locomotive was then 1,000 to 1,100 feet east of the signal. He said that he did not hear the engineer call the indication of this signal. The fireman and the roadmaster said they thought that the engineer initiated a service application of the brakes. When the upper portion of the steam locomotive became visible to them over the top of the south wall of the cut and they saw the brakeman giving stop signals from a point

east of the east siding-switch, which was lined for movement to the siding, the roadmaster and the fireman alighted from the locomotive. The roadmaster estimated that the speed of the train was 35 to 45 miles per hour at the point of collision. The conductor and the flagman said that the brakes were applied in emergency a few seconds before the collision occurred and that they had not felt a preceding service application approaching this point. They said that the collision occurred before the speed of the train was appreciably reduced. The front brakeman said that he did not feel any application of the brakes before the collision occurred.

Examination of the equipment of No. 5 after the accident occurred disclosed that the brakes of all cars were applied. Because of damage to the control compartment of the first Diesel-electric unit, the positions of the automatic and independent brake valves at the time of the accident could not be determined.

After the track which was damaged in the accident was repaired, the signal system in the vicinity of Cheney was tested. It functioned as intended. Examination of the signal apparatus involved disclosed no defective condition.

When the east switch of storage track No. 1 is opened, signal 14.3 is caused to indicate Approach and signal 15.5 is caused to indicate Proceed-at-restricted-speed-without-stopping. A train moving at a speed of 45 miles per hour moves from signal 14.3 to signal 15.5 in approximately 1 minute 31 seconds. According to the statements of members of the crew of Extra 5119 East this switch was opened several minutes before the accident occurred, and signal 14.3 should have indicated Approach for the movement of No. 5. According to the statements of the surviving employees on the locomotive of No. 5 signal 14.3 indicated Proceed, indicating that the switch was not opened until after No. 5 passed the signal. However, these employees were in agreement that signal 15.5 was displaying its most

restrictive aspect as No. 5 approached and passed it. This aspect required that the speed of No. 5 be reduced immediately to 15 miles per hour or less and that the train proceed at restricted speed. The engineer was killed in the accident, and the reason for failure to reduce the speed in compliance with the indication of the signal is not known. In observations made after the accident occurred it was found that signal 15.5 is visible from the control compartment of a west-bound locomotive throughout a distance of 1,406 feet immediately east of the signal.

The rules of this carrier provide that inferior trains must keep out of the way of opposing superior trains, and failing to clear the main track by the time required by rule must be protected as prescribed by rule No. 99. These rules are not modified by the rules governing movements in automatic block-signal territory. The rules also provide that in automatic block-signal territory a main track must not be fouled or entered until a 3-minute period has elapsed after the switch or switches have been lined for the movement. In the instant case the east siding-switch at Cheney was lined for movement to the main track and the main track was fouled by Extra 5119 East after No. 5 was due to leave Marshall and before adequate protection for the movement had been provided.

Cause

This accident was caused by a train fouling the main track on the time of an opposing superior train without adequate protection.

Dated at Washington, D. C., this third day of October, 1956.

By the Commission, Commissioner Clarke.

(SEAL)

HAROLD D. McCOY,

Secretary.