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Decision No. 74250

ORIGINAL

BEFORE THE PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA

Investigation on the Commission's own motion into the operations and practices of SOUTHERN PACIFIC COMPANY, a corporation.	Case No. 8725

Harold S. Lentz, for respondent.
William D. Burleson, for The Gridley Herald; Howard E. Moore, for State Forester F. H. Raymond; Everett Hamman, in propria persona; Richard Carpenter, for League of California Cities; William G. McMurtry, Mayor, for City of Gridley; Larry L. Sweringen, in propria persona; interested parties.
Elinore C. Morgan, Counsel, for the Commission staff.

O P I N I O N

This investigation was heard and submitted March 5, 1968 before Examiner Thompson at Gridley subject to the filing of proposed findings due April 29, 1968.

On November 7, 1967, the Commission issued its order instituting an investigation into the operations and practices of Southern Pacific Company,

> "for the purpose of determining whether the operation of the bi-directional hot-box detector installed at MP 163.9 and the readout equipment located near the north City Limits of Gridley, is dangerous and hazardous to the health, safety, and welfare of the public."

The Commission's staff presented evidence regarding the locations of the various units comprising the hotbox detector equipment and the operations and the functions of the equipment. Its conclusion is that the detector is a desirable safety device and is not dangerous or hazardous to the health, safety, and welfare of the public.

William D. Burleson is a councilman of the City of Gridley and is publisher of The Gridley Herald. It is his contention that the location of the readout is such that trains having a hotbox will stop adjacent to oil storage tanks and that most of the cars in the train will not be accessible to fire fighting equipment. He contends that this circumstance will necessitate the train being moved through the City of Gridley so that the car having the hotbox can be set out at a siding accessible to fire fighting equipment. The switching necessary to set out the car, he alleges, will close all of the crossings in Gridley completely severing the city for considerable time, which, because of the locations of hospitals and fire stations will adversely affect the safety, health and welfare of the people of Gridley as well as inconveniencing the public requiring access between the portions of the city separated by the railroad. He also contends that the hauling of a burning car through the city creates an undue hazard to the people of Gridley and is unsafe. His position may best be set forth in his own words,

> "I do not think the location is proper. I think the equipment is fine. The idea is great, but the City was not taken into consideration at all."

The position of the City of Gridley stated by its Mayor is that the city should have been consulted by respondent concerning the location of the detector, and more particularly the readout. On a number of occasions respondent has sought the assistance of the City's Fire Department to extinguish fires on cars and locomotives. The siding used by respondent is at the south end of Gridley and

the city is apprehensive that the location of the readout, together with respondent's procedures with respect to hotboxes that are detected will result in closing all crossings and will involve the movement of burning cars through the city. The city states that it should also be reimbursed by respondent for the assistance furnished by its Fire Department, which, it states, it has not received in the past.

The State Forester's and the League of California Cities' interests in this proceeding concern the location of hotbox detector equipment generally. The State Forester advocates locations at points that are readily accessible to public fire fighting equipment in order to diminish high fire risks to the rural and wild land areas of the State. The League advocates locations which will avoid danger to highly populated areas from possible conflagration. Both parties support the use of hotbox detectors as a safety device.

Respondent asserts that the method of handling and correcting hotboxes after detection is outside the scope of the Order Instituting Investigation.

The matters of the location of hotbox detectors at points other than Gridley, whether cities or local agencies should be consulted regarding their location, or whether respondent should be required to pay Gridley for fire fighting assistance are not within the scope of this investigation. The procedures used by respondent following detection by the detector at MP 163.9 and the readout at Gridley are material to this investigation. The activation of the signals and the readout by the scanners detecting a hotbox presume some action being taken by respondent as a result thereof and such action or procedures are just as much a part of the operation of the detectors as the activation of the equipment itself.

The city's apprehension regarding the hotbox detector equipment stems from experiences when burning equipment has been taken by respondent through Gridley to be placed on a set-out track, when all crossings have been blocked by respondent in switching cars onto the set-out track, and when respondent has called upon the city to provide fire fighting assistance which the Fire Chief asserts can only be provided at the set-out track. Those experiences preceded the installation of the detector equipment. It is their contention, however, that the purpose of the equipment is to detect hotboxes and therefore the possibility of there being cars moved through the city to the set-out track increases the probability of the stopping of cars that are potential fire hazards in a populated area or adjacent to oil storage facilities, increases the number of movements of such cars through the city and increases the number of crossing closings. We are not persuaded that such will be the case and we make the following findings:

1. In railroad parlance a hotbox is an overheated journal (axle) bearing on a rail car. In times past all rail cars were equipped with friction bearings which were lubricated by packing with oil-soaked waste in a box surrounding the bearing (journal box). When the train was in motion the train crews detected overheated friction bearings from seeing smoke emitted from the journal box or by smelling the oil which contained a fish oil or emulsion that when heated provided a distinctive odor. The oil and waste was inflammable and when heated to the flash point ignited and resulted in a fire in the journal box.

2. No car with friction bearings lubricated with oil-soaked waste is operated over the rail line here involved. Approximately

24 percent of the rail cars in the United States are equipped with roller bearings. Respondent has approximately 80,000 cars, of which 28 percent are roller-bearing equipped. All friction-bearing cars operated on the line involved herein have spring lubricating pads, a high grade of lubricant and plastic dust guards which make it more difficult for trainmen to detect overheated bearings on a moving train by sight or by smell. The lubricants are less susceptible to ignition than oil-soaked waste and only a small percentage of hotboxes on such cars result in fire.

3. Overheated bearings or journals on roller-bearing cars cannot be detected visually or by smell. The lubricants are tightly enclosed about the journal and ignition is virtually impossible.

4. Overheated journals, or hotboxes, whether on roller-bearing cars or cars equipped with friction bearings create a danger and a hazard of derailment of cars in the train. When a journal has been seriously overheated it may fail either by crystallization or wear and break off, dropping to the track and thereby derail the car and following cars. When a hotbox is developed to a point where there is a fire, a derailment is a serious and substantial possibility.

5. A hotbox detector system consists of several devices, signals and facilities which detect, by electronic means, overheated journals in passing trains; notifies the train crew of the location in the train of the hotbox, and provides the means for the crew to appropriately handle the situation. The system consists of a detector which contains heat-sensory scanners and counting devices together with a light thereon which flashes when a hotbox is detected, an "H-Signal" which is an indicator on a mast some

distance beyond the detector which is illuminated when the detector sends a signal, a readout located some distance beyond the detector and H-Signal which by dials indicates the location of the hotbox with respect to the head end of the train, and a siding beyond the readout where cars having hotboxes can be set out.

6. Location of hotbox detector systems is dependent upon many factors. Respondent has made an effort to place them in areas where experience has shown hotboxes may develop and has spaced the systems either closer or farther apart depending upon the frequency of hotboxes in the general area and the speed of trains over the lines. Within that frame of reference, respondent has considered other factors in determining the precise location of equipment, including the availability of existing sidings and masts, availability of power and access to the equipment. Respondent employed the Committee for Economic and Industrial Research, a consultant, at a cost of 30 to 40,000 dollars for an analysis of where hotbox detectors should be placed. Using that study as a guide and using its own experience tables, and then relating both to local conditions, respondent established a priority list of locations for hotbox detectors.

7. The hotbox detector system here involved was placed in service on December 20, 1966 and was installed pursuant to the hotbox detector program mentioned above. Gridley Depot is located at MP 158.0. The bi-directional detector was placed at MP 163.9 and the equipment for westbound (southbound) trains was located as follows: the H-Signal on an existing mast at MP 160.1, the readout at MP 158.15 (on the north side of Spruce Street which is the northernmost crossing in Gridley), and the set-out track is an

existing siding at approximately MP 157.6 (at the southern boundary of the limits of the City of Gridley). The main line covered by the detector system is single track.

8. Respondent has established procedures and has issued instructions to trainmen which are to be followed in connection with the operation of the hotbox detector systems and to be followed in connection with the handling of hotboxes that have been detected by any means. The procedures and instructions are detailed, but may be briefly summarized to relate to the issues raised by the city: When the H-Signal is illuminated or it is known that a hotbox has been detected by a crew member observing the flashing white light at the scanner site or otherwise, the train may be stopped or speed shall be reduced to not exceeding 15 miles per hour until stop is made at the readout. When stop is made at the readout a trainman shall check the readout to determine the location of the hotbox. There is radio communication between the locomotive and the caboose so that instructions or information can be communicated to the rear of the train. It is mandatory when a hotbox is being investigated by a member of the crew that he avail himself before leaving the engine or caboose with a one-pound shaker tube of dry chemical for use on oil, waste or electrical fires, or the five-gallon water fire extinguisher for use on wood insulation and freight. All journals of the car indicated by the detector as well as each adjoining car must be inspected. Roller bearings indicated as overheated shall be tested with a tempilstik. Following inspection the conductor must make a decision concerning what should be done consistent with regulations of the Interstate Commerce Commission and general rules and procedures of the company. Generally speaking

those regulations and general rules require the conductor to take the following actions: Placarded cars (those laden with explosives) which have been on fire due to hot journals or any other cause shall not be moved except to the extent necessary to facilitate fire fighting, including the isolation of the car from the train, until it has been determined that all fire has been extinguished. On any roller-bearing car where the heat of the bearing melts the tempil-stik the bearing temperature is to be considered excessive and further movement of the car to the nearest set-out point must be done cautiously and then only when in the opinion of the conductor it is safe to do so. With respect to friction-bearing cars when in the opinion of the conductor the bearing temperature is excessive further movement shall not be made unless he considers it safe to do so and then it shall be made cautiously.

9. When a hotbox is detected by the scanner and notice thereof is provided the train crew either by the flashing light on the scanner or by the H-Signal, pursuant to said rules and instructions, and pursuant to standard operating procedures, the train will be stopped without delay or reduced in speed and stopped with the locomotive adjacent to the readout and north, and clear of, the Spruce Street crossing. If, after inspection, the conductor is of the opinion that the affected car should be set out and that it is safe to proceed cautiously, the train is cut at the rear end of the affected car, that cut of cars is transported through the city and past the switch to the aforementioned siding where the train will be stopped, the switch thrown and the affected car is spotted on the siding. The locomotive and the cut of cars will then proceed back on the main line to pick up the cars that have been left.

At no time during such operation will any cars be stopped or left standing at any crossing. If on making his inspection at the time the train is stopped at the readout the conductor encounters a burning car and is of the opinion that assistance from a public agency is required to control or extinguish the fire, he will take whatever action is necessary at the spot to contain or isolate the blaze from adjoining cars and will move the blazing car only to accommodate the needs or desires of the fire fighting agency - in this case the Gridley Fire Department.

10. Regulations issued by the Interstate Commerce Commission require that a car placarded "Explosives" shall be placed not nearer than the sixteenth car from both the engine and the caboose. Locomotive units and rail cars vary in length but in most cases a car containing explosives would have to be north of the oil storage tanks north of Spruce Street when the locomotive has stopped at the readout.

11. Hotbox detector systems are safety devices which provide for early detection and correction to avoid burned off journals (axles) and resulting potentially catastrophic derailments.

12. With early detection and correction of hotboxes by the hotbox detector system the probability of overheated bearings resulting in a burning car is very small.

13. The handling of cars with hotboxes following detection by the hotbox detector pursuant to the rules and standard operating procedures promulgated by respondent will not result in the blocking of any crossings by stopped cars in the City of Gridley.

14. The hotbox detector equipment and facilities, and the operations of respondent in connection therewith, do not constitute

a danger or hazard to the health, safety or welfare of the public.

The concern and the apprehension of Mr. Burleson and of the City of Gridley appear to have been well-warranted by past actions of respondent in the moving of cars and trains in the city and by respondent's actions in its dealings with the city. As stated above, the matters of the respondent consulting with the city regarding the location of the facilities and of the payment for fire-fighting services are not within the scope of this investigation. Our findings herein relate only to the issues raised by the Order of Investigation and are that the hotbox detector equipment is safe and that the handling of cars having hotboxes pursuant to the rules and procedures promulgated by respondent will not be unduly dangerous or hazardous. We believe we should state, however, that while the installation by respondent of safety devices such as hotbox detectors is highly commendable, its relationships with local agencies would be improved and the need for complaints and hearings arising out of justifiable fears would be removed if respondent attempted to consult with the local authorities beforehand. Local government correctly has to consider the welfare and safety of its residents. Utilities should recognize this in their relationships with the communities they serve.

We conclude that as full investigation of the operation of the hotbox detector equipment and facilities involved herein has been made, and that no action by respondent in connection therewith

is necessary, the investigation instituted by the Commission's Order dated November 7, 1967, should be discontinued.

O R D E R

IT IS ORDERED that the above-entitled investigation instituted November 7, 1967 is discontinued.

The effective date of this order shall be twenty days after the date hereof.

Dated at San Francisco, California, this 18th day of * JUNE, 1968.

Peter E. Mitchell
President

Wm. Symons Jr.
Thos. P. Morrissey
Commissioners

Commissioner William M. Bennett, being necessarily absent, did not participate in the disposition of this proceeding.