Federal Railroad Administration
Office of Safety
Headquarters Assigned
Accident Investigation Report
HQ-2005-105

Union Pacific (UP)/Norfolk Southern (NS)
Momence, Illinois
November 24, 2005

Note that 49 U.S.C. §20903 provides that no part of an accident or incident report made by the Secretary of Transportation/Federal Railroad Administration under 49 U.S.C. §20902 may be used in a civil action for damages resulting from a matter mentioned in the report.

DEPARTMENT OF TRANSPORTATION
FEDERAL RAILROAD ADMINISTRATION

FRA FACTUAL RAILROAD ACCIDENT REPORT

FRA File # HQ-2005-105

1.Name of Railroad Operating Train #1 Union Pacific RR Co. [UP]	1a. Alphabetic Code UP	1b. Railroad Accident/Incident No. 1105PR026
2.Name of Railroad Operating Train #2 Norfolk Southern Corp. [NS]	2a. Alphabetic Code NS	2b. Railroad Accident/Incident 023062
3.Name of Railroad Responsible for Track Maintenance: Union Pacific RR Co. [UP]	3a. Alphabetic Code UP	3b. Railroad Accident/Incident No. 023062
4. U.S. DOT_AAR Grade Crossing Identification Number	5. Date of Accident/Incident Month 11 / Day 24 / Year 2005	6. Time of Accident/Incident 07:46:00 ☑ AM ☐ PM

7. Type of Accident/Indicent *(single entry in code box)*: 1. Derailment; 2. Head on collision; 3. Rear end collision; 4. Side collision; 5. Raking collision; 6. Broken Train collision; 7. Hwy-rail crossing; 8. RR grade crossing; 9. Obstruction; 10. Explosion-detonation; 11. Fire/violent rupture; 12. Other impacts; 13. Other *(describe in narrative)* — **04**

8. Cars Carrying HAZMAT	9. HAZMAT Cars Damaged/Derailed	10. Cars Releasing HAZMAT	11. People Evacuated	12. Division
23	6	1	75	ST LOUIS

13. Nearest City/Town	14. Milepost *(to nearest tenth)*	15. State Abbr	15. State Code	16. County
MOMENCE	49.8	N/A	IL	KANKAKEE

17. Temperature (F) *(specify if minus)*	18. Visibility *(single entry)* 1. Dawn 2. Day 3.Dusk 4.Dark — Code	19. Weather (single entry) 1. Clear 2. Cloudy 3. Rain 4. Fog 5.Sleet 6.Snow — Code	20. Type of Track 1. Main 2. Yard 3. Siding 4. Industry — Code
21 F	2	1	1

21. Track Name/Number	22. FRA Track Class (1-9, X) — Code	23. Annual Track Density *(gross tons in millions)*	24. Time Table Direction 1. North 3. East — Code
UP MAIN TRACK NO 1	3	17	2

OPERATING TRAIN #1

25. Type of Equipment Consist *(single entry)*: 1. Freight train; 2. Passenger train; 3. Commuter train; 4. Work train; 5. Single car; 6. Cut of cars; 7. Yard/switching; 8. Light loco(s).; 9. Maint./inspect.car; A. Spec. MoW Equip. — Code: 1

26. Was Equipment Attended? 1. Yes 2. No — Code: 1

27. Train Number/Symbol: MCHNL 24

28. Speed *(recorded speed, if available)* — Code
R - Recorded
E - Estimated 28 MPH — R

29. Trailing Tons *(gross tonnage, excluding power units)*: 5410

30. Method(s) of Operation *(enter code(s) that apply)*
a. ATCS; b. Auto train control; c. Auto train stop; d. Cab; e. Traffic; f. Interlocking; g. Automatic block; h. Current of traffic; i. Time table/train orders; j.Track warrant control; k. Direct traffic control; l.Yard limits; m.Special instructions; n. Other than main track; o. Positive train control; p. Other *(Specify in narrative)*
Code(s): e | f | g | N/A | N/A

30a. Remotely Controlled Locomotive?
0 = Not a remotely controlled; 1 = Remote control portable; 2 = Remote control tower; 3 = Remote control transmitter - more than one remote control transmitter — 0

31. Principal Car/Unit	a. Initial and Number	b. Position in Train	c. Loaded *(yes/no)*
(1) First involved *(derailed, struck, etc)*	N/A	1	N/A
(2) Causing *(if mechanical cause reported)*	0	0	N/A

32. If railroad employee(s) tested for drug/alcohol use, enter the number that were positive in the appropriate box.

Alcohol	Drugs
00	00

33. Was this consist transporting passengers? (Y/N): N

34. Locomotive Units	a. Head End	Mid Train b. Manual	Mid Train c. Remote	Rear End d. Manual	Rear End c. Remote
(1) Total in Train	2	0	0	0	0
(2) Total Derailed	2	0	0	0	0

35. Cars	Loaded a. Freight	Loaded b. Pass.	Empty c. Freight	Empty d. Pass.	e. Caboose
(1) Total in Equipment Consist	30	0	54	0	0
(2) Total Derailed	3	0	10	0	0

36. Equipment Damage — This Consist: 1081964

37. Track, Signal, Way, & Structure Damage: 428500

38. Primary Cause Code: H221

39. Contributing Cause Code: H992

Number of Crew Members

40. Engineer/ Operators	41. Firemen	42. Conductors	43. Brakemen
1	1	1	0

Length of Time on Duty

44. Engineer/Operator: Hrs 8 Mi 1

45. Conductor: Hrs 8 Mi 1

Casualties to:	46. Railroad Employees	47. Train Passengers	48. Other
Fatal	0	0	0
Nonfatal	N/A	0	0

49. EOT Device? 1. Yes 2. No — 1

50. Was EOT Device Properly Armed? 1. Yes 2. No — 1

51. Caboose Occupied by Crew? 1. Yes 2. No — 2

OPERATING TRAIN #2

52. Type of Equipment Consist *(single entry)*: 1. Freight train; 2. Passenger train; 3. Commuter train; 4. Work train; 5. Single car; 6. Cut of cars; 7. Yard/switching; 8. Light loco(s).; 9. Maint./inspect.car; A. Spec. MoW Equip. — Code: 1

53. Was Equipment Attended? 1. Yes 2. No — Code: 1

54. Train Number/Symbol: 10RB4 24

55. Speed *(recorded speed, if available)* — Code
R - Recorded
E - Estimated 30 MPH — R

57. Method(s) of Operation *(enter code(s) that apply)*
a. ATCS; b. Auto train control; g. Automatic block; h. Current of traffic; m.Special instructions; n. Other than main track

57a. Remotely Controlled Locomotive?
0 = Not a remotely controlled; 1 = Remote control portable

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56. Trailing Tons *(gross tonnage, excluding power units)*	c. Auto train stop d. Cab e. Traffic f. Interlocking	i. Time table/train orders j.Track warrant control k. Direct traffic control l.Yard limits	o. Positive train control p. Other *(Specify in narrative)* Code(s)	2 = Remote control tower 3 = Remote control transmitter - more than one remote control transmitter
10890			j N/A N/A N/A N/A	0

58. Principal Car/Unit	a. Initial and Number	b. Position in Train	c. Loaded *(yes/no)*
(1) First involved *(derailed, struck, etc)*	MEC 375	3	N/A
(2) Causing *(if mechanical cause reported)*	N/A	N/A	N/A

59. If railroad employee(s) tested for drug/alcohol use, enter the number that were positive in the appropriate box.

Alcohol	Drugs
00	00

60. Was this consist transporting passengers? (Y/N) N

61. Locomotive Units	a. Head End	Mid Train b. Manual	Mid Train c. Remote	Rear End d. Manual	Rear End c. Remote
(1) Total in Train	5	0	0	0	0
(2) Total Derailed	3	0	0	0	0

62. Cars	Loaded a. Freight	Loaded b. Pass.	Empty c. Freight	Empty d. Pass.	e. Caboose
(1) Total in Equipment Consist	90	00	00	00	00
(2) Total Derailed	26	00	00	00	00

63. Equipment Damage This Consist	64. Track, Signal, Way, & Structure Damage	65. Primary Cause Code	66. Contributing Cause Code
1037500	78000	H221	H992

Number of Crew Members

67. Engineer/ Operators	68. Firemen	69. Conductors	70. Brakemen
1	N/A	1	N/A

Length of Time on Duty

71. Engineer/Operator	72. Conductor
Hrs 2 Mi 56	Hrs 2 Mi 56

Casualties to:	73. Railroad Employees	74. Train Passengers	75. Other
Fatal	00	00	00
Nonfatal	00	00	00

76. EOT Device? 1. Yes 2. No — 1

77. Was EOT Device Properly Armed? 1. Yes 2. No — 1

78. Caboose Occupied by Crew? 1. Yes 2. No — 2

Highway User Involved

79. Type — Code: N/A
C. Truck-Trailer. F. Bus J. Other Motor Vehicle
A. Auto D. Pick-Up Truck G. School Bus K. Pedestrian
B. Truck E. Van H. Motorcycle M. Other *(spec. in narrative)*

80. Vehicle Speed *(est. MPH at impact)* N/A

81. Direction *(geographical)* — Code: N/A
1.North 2.South 3.East 4.West

82. Position — Code: N/A
1.Stalled on Crossing 2.Stopped on Crossing 3.Moving Over Crossing
4. Trapped

86a. Was the highway user and/or rail equipment involved in the impact transporting hazardous materials? — Code: N/A
1. Highway User 2. Rail Equipment 3. Both 4. Neither

Rail Equipment Involved

83. Equipment — Code: N/A
1.Train *(units pulling)* 3.Train *(standing)* 4.Car(s) *(moving)* 5.Car(s) *(standing)* 6.Light Loco(s) *(moving)* 7.Light(s) *(standing)* 2.Train *(units pushing)* 8.Other *(specify in narrative)*

84. Position of Car Unit in Train: N/A

85. Circumstance — Code: N/A
1. Rail Equipment Struck Highway User
2. Rail Equipment Struck by Highway User

86b. Was there a hazardous materials release by — Code: N/A
1. Highway User 2. Rail Equipment 3. Both 4. Neither

86c. State here the name and quantity of the hazardous materials released, if any.
N/A

87. Type of Crossing Warning — 1.Gates 2.Cantilever FLS 3.Standard FLS 4.Wig Wags 5.Hwy. traffic signals 6.Audible 7.Crossbucks 8.Stop signs 9.Watchman 10.Flagged by crew 11.Other *(spec. in narr.)* 12.None

Code(s)							
N/A	N/A	N/A	N/A	N/A	N/A	N/A	

88. Signaled Crossing Warning Code *(See instructions for codes)*: N/A

89. Whistle Ban — Code: N/A
1. Yes
2. No
3. Unknown

90. Location of Warning — Code: N/A
1. Both Sides
2. Side of Vehicle Approach
3. Opposite Side of Vehicle Approach

91. Crossing Warning Interconnected with Highway Signals — Code: N/A
1. Yes
2. No
3. Unknown

92. Crossing Illuminated by Street Lights or Special Lights — Code: N/A
1. Yes
2. No
3. Unknown

93. Driver's Age: 0

94. Driver's Gender — Code: N/A
1. Male
2. Female

95. Driver Drove Behind or in Front of Train and Struck or was Struck by Second Train — Code: N/A
1. Yes 2. No 3. Unknown

96. Driver — Code: N/A
1. Drove around or thru the Gate
2. Stopped and then Proceeded
3. Did not Stop
4. Stopped on Crossing
5. Other *(specify in narrative)*

97. Driver Passed Standing Highway Vehicle — Code: N/A
1. Yes 2. No 3. Unknown

98. View of Track Obscured by *(primary obstruction)* — Code: N/A
1. Permanent Structure
2. Standing Railroad Equipment
3. Passing Train
4. Topography
5. Vegetation
6. Highway Vehicle
7. Other *(specify in narrative)*
8. Not obstructed

101. Casulties to Highway-Rail Crossing Users	Killed	Injured
	0	0

99. Driver Was — Code: N/A
1. Killed 2.Injured 3. Uninjured

100. Was Driver in the Vehicle? — Code: N/A
1. Yes 2. No

102. Highway Vehicle Property Damage *(est. dollar damage)*: 0

103. Total Number of Highway-Rail Crossing Users *(include driver)*: 0

104. Locomotive Auxiliary Lights? — Code: N/A
1. Yes 2. No

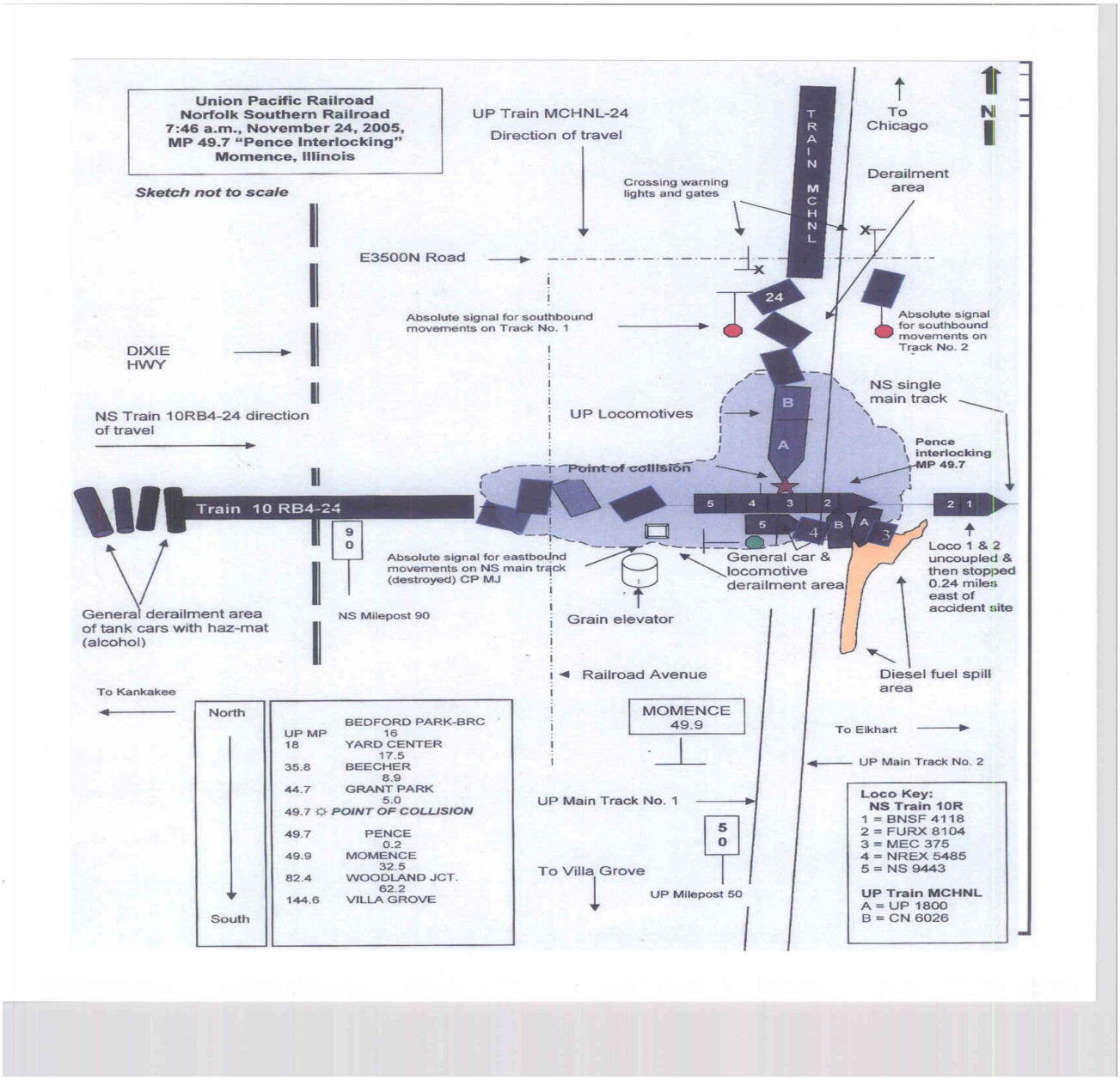
105. Locomotive Auxiliary Lights Operational? — Code: N/A
1. Yes 2. No

106. Locomotive Headlight Illuminated? — Code: N/A
1. Yes 2. No

107. Locomotive Audible Warning Sounded? — Code: N/A
1. Yes 2. No

108. DRAW A SKETCH OF ACCIDENT AREA INCLUDING ALL TRACKS, SIGNALS, SWITCHES, STRUCTURES, OBJECTS, ETC., INVOLVED.

HQ-105-2005 Sketch.jpg



109. SYNOPSIS OF THE ACCIDENT

A southbound Union Pacific (UP) freight train collided with an eastbound Norfolk Southern (NS) freight train at an interlocking on November 24, 2005, at 7:46 a.m. The accident occurred in Momence, Illinois at UP Milepost 49.8, Pence Interlocking, on the St. Louis Service Unit, Villa Grove Subdivision.
Two UP train crew members were injured; there were no injuries to the NS train crew. Both locomotives on the UP train were destroyed. Two of the five NS locomotives were destroyed and one was severely damaged. Thirteen cars derailed in the UP train. Total UP damages were $1,497,264, broken down as follows: $320,300 track, $95,000 signal, $913,160 locomotive, and $168,804 car. The NS train had 26 cars derailed. Total NS damages were $1,115,500, broken down as follows: $70,000 track, $8,000 signal, $700,000 locomotive, and $337,500 car.
The derailed cars in the NS train included six loaded, placarded tank cars carrying hazardous material, UN 1987-Alcohol N.O.S. One of these cars leaked a small amount of alcohol, later determined to be about 500 gallons. The local authorities evacuated 25 homes adjacent to the NS track for several hours as a precautionary measure. There were no injuries from the leaking alcohol.
At the time of the accident, the weather was clear with a temperature of 21 °F.
The accident was caused by the failure of the southbound UP train crew to stop for the interlocking signal at Pence Interlocking that displayed a stop indication.

110. NARRATIVE

The following information was obtained from an investigation that was conducted by the Federal Railroad Administration.

Circumstances Prior to the Accident:
The following information was obtained through an investigation that was performed by the Federal Railroad Administration.
Train No. 1, UP MCHNL-24 South
The crew of train UP MCHNL-24 South included a locomotive engineer, fireman-in-training (FIT or student locomotive engineer), and a conductor. They reported for duty at 11:45 p.m., CST, November 23, 2005, at Belt Railway of Chicago's (BRC) Clearing Yard, in Bedford Park, Illinois. This was the away-from-home terminal for all crew members, and all received more than the statutory off-duty period prior to reporting to duty.
Their assigned freight train was assembled by the BRC. It consisted of three locomotives 34 loaded cars and 33 empty cars, weighing 5,174 tons and was 4,031 feet in length. Following a Class 1 train air brake test at Clearing Yard, the train departed at 2:40 a.m., November 24, 2005. Its destination was North Little Rock, Arkansas. The locomotive engineer operated the train over the BRC from Clearing Yard seven miles to 81st Street where the train left the BRC track and then entered the UP Villa Grove Subdivision. The train then proceeded nine miles south to Yard Center, UP's yard in South Holland, Illinois.
At Yard Center, they delivered 18 cars and one locomotive to the yard. Upon arrival at Yard Center, the FIT took over operation of the locomotive for the remainder of the trip. He was under the supervision of the locomotive engineer. After delivering the cars and the locomotive to Yard Center, the train consisted of two locomotives, 35 cars added at Yard Center, and 49 cars from the original train. Following a Class 3 train air brake test, the train departed Yard Center at 6:49 a.m. with 30 loaded cars and 54 empty cars. It was 5,214 feet long and weighed 5,412 tons. No other work was scheduled for the trip.
As the train approached the accident area, the FIT was seated at the controls on the west side of the lead locomotive, UP 1800. The locomotive engineer was seated on the east side of the leading locomotive. The conductor was riding in the trailing locomotive, CN 6026, and was seated on the west side of the locomotive.

The train was traveling south at 48 mph when it passed an Advance Approach signal at UP Milepost 45.3 (proceed at no more than 40 mph, prepared to stop at the second signal). Event recorder data later downloaded from CN 6026 provided operational data. At UP Milepost 45.8, the FIT started dynamic braking of the train, intending to slow it to 40 mph. The locomotive engineer left the locomotive cab and entered the toilet compartment located in the nose of the locomotive. The train was operating on Main Track No. 1.

In this area of the railroad, beginning at UP Milepost 48.2, there are, in succession, a 1-degree 0-minute right-hand curve one-quarter mile in length, followed by a tangent for a distance of approximately one mile to the point of accident and 300 feet beyond. The grade is practically level, with a maximum grade of 0.18 percent descending southward. There are two main tracks. The method of operation is Track Warrant Control (TWC) supplemented by an automatic block signal system and interlocking rules. The maximum allowed speed for the territory is 60 mph for all trains. Train UP MCHNL-24 South's maximum authorized speed was 50 mph, per train timetable special instructions. The General Code of Operating Rules, Fifth Edition, Effective April 3, 2005, are used.

The railroad timetable direction of the train was south, which corresponds with the geographic direction.

Train No. 2, NS 10RB4-24 East

The crew of Train NS 10RB4-24 East included a locomotive engineer and a conductor. They reported for duty at 4:50 a.m., CST, November 24, 2005, at the Norfolk Southern Railroad yard, in Kankakee, Illinois. This was the home terminal for both crew members, and both received more than the statutory off-duty period prior to reporting to duty.

Their assigned freight train consisted of five locomotives and 90 loaded cars. It was 6,119 feet long and weighed 10,890 tons. The train's destination was Elkhart, Indiana, with no work en route. The train had originated on the BNSF Railroad in Galesburg, Illinois. The BNSF operated the train to Streator, Illinois, where it was delivered in interchange to the NS. An NS crew operated the train from Streator to Kankakee where a crew change took place.

Train 10RB4-24 East departed Kankakee at 6:30 a.m. and operated to NS Milepost KS 91.4, near Momence, where it stopped to wait for more main track authority to allow it to proceed beyond Momence. The train waited at the approach distant signal for the CP MJ interlocking plant. The signal displayed an "Approach" indication when the train stopped.

The train dispatcher issued additional main track authority to the train at 7:37
a.m. to proceed 13 miles east to Schneider, Indiana. The distant signal for the CP MJ Interlocking changed to a "Clear" indication and, at 7:39 a.m., Train 10RB4-24 East began moving east from NS Milepost KS 91.4.

As the eastbound train approached the accident area, the locomotive engineer was seated at the controls on the south side of the lead locomotive. The short hood end of the lead locomotive, BNSF 4118, was forward. The conductor was seated on the north side of the lead locomotive.

In this area of the railroad, beginning at Milepost KS 91.4, there are, in succession, a tangent for one mile to NS Milepost KS 90.4 where there is a 1- degree 1-minute right-hand curve 1,800 feet in length, followed by a tangent for a distance of one mile to the point of accident and a considerable distance beyond. The grade is practically level, with a maximum grade of 0.01 percent ascending eastward.

The method of operation in this territory is by Form D authority, a form of main track authority similar to Track Warrant Control. The maximum allowed speed for all trains in this territory is 45 mph. NORAC operating rules are used.

The railroad timetable direction of the train was east, which corresponds with the geographic direction.

The Accident

Train No. 1, UP MCHNL-24 South

The approach signal for the interlocking is located at UP Milepost 47.5; the train was moving at 45 mph when it passed this signal, 2.2 miles from the accident site.

At UP Milepost 48.5, one mile north of the accident site, the track is tangent with a clear, unobstructed view to the south. The FIT was sounding the locomotive horn for a highway-rail crossing immediately north of the interlocking, when he observed the absolute signal at Pence Interlocking displaying "Stop." The train was moving at a recorded speed of 39 mph. The FIT made an emergency application of the train air brake system at a point 1,100 feet from the NS crossing. It was at this time that the FIT noticed the eastbound NS train approaching the NS crossing from the right.

The FIT announced to the locomotive engineer in the toilet compartment that they were going to hit another train. The FIT stayed in his seat but leaned over to his left and braced himself on the control stand. The locomotive engineer made it partially into the cab of the locomotive from the toilet compartment. The train had slowed to 28 mph when it struck the side of the eastbound NS train.

Train No. 2, NS 10RB4-24 East

The train was being operated at 30 mph when it exited the curve at NS Milepost KS 90.1. The crew observed the absolute signal at CP MJ about one-half mile ahead displaying a "Clear" indication. There is an

unobstructed view of the signal from this point. The conductor called out this "Clear" signal indication over the radio, per NS operating rules. This signal call-out was overheard by a nearby NS track supervisor over the radio in his hi-rail truck.

The locomotive engineer was operating the train at a recorded speed of 30 mph because of a speed restriction several miles east of the UP crossing. The train air brakes were released as was the independent brake. When the train was about 150 feet west of the absolute signal, the locomotive engineer observed the absolute signal change to a "Stop" indication. He called out this change and the conductor acknowledged his call. A moment later the locomotive engineer noticed a southbound UP train approaching the crossing from his left. The locomotive engineer advanced the throttle to Run Position 6. A few seconds elapsed and the first two locomotives passed unharmed over the UP crossing. The UP train then struck the side of the third locomotive in the NS consist. The train's emergency air brake system then applied.

The impact uncoupled the second locomotive from the three trailing locomotives. The lead locomotive remained coupled to the second locomotive and together, they continued to a point 1,306 feet east of the collision point where they stopped. The locomotive engineer had bailed off the locomotive air brakes when the train's emergency air brake system applied. He did this to keep the locomotives moving east, away from the accident. After the locomotives stopped, the train crew radioed to the train dispatcher about the accident. They then stayed on the locomotive to attend the radio and wait for assistance. Neither employee walked back due to the fire at the accident site.

The collision caused the derailment of both locomotives on UP Train MCHNL-24 South and 13 cars of the train. Although there were six placarded cars containing hazardous materials in the UP train, they were located deep in the train and did not derail.

The lead locomotive, UP 1800, struck the third locomotive in NS Train 10RB-24 East's consist, MEC 375, splitting it in half. Locomotive UP 1800 rode up on top of the wreckage at an angle of about 30 degrees from the ground after traveling about 105 feet south after the impact. The FIT and the locomotive engineer exited the locomotive cab out the east side cab window, dropped to the ground, and moved away from the wreckage. Locomotive UP 1800 had caught fire and was burning as the two men jumped off the locomotive. The UP conductor also exited the cab of derailed trailing locomotive CN 6026 through a side window. The locomotive engineer of UP Train MCHNL-24 South suffered a broken foot. The UP conductor suffered a sprained shoulder. Both injuries were FRA reportable.

There were no injuries to the crew on NS Train 10RB-24 East. A NS road foreman of engines was the first railroad officer on the scene, followed a short time after by officials from the UP.

The collision caused the derailment of the three trailing locomotives and 26 cars in NS Train 10RB-24 East. In addition to locomotive MEC 375 mentioned above, locomotives NREX 5485 and NS 9443 also derailed. The derailed cars in the train were in three separate locations, cars 1 through 12, then cars 47 thru 52, and then cars 59 through 66. There were 17 cars in the train placarded as containing hazardous materials; six of these cars derailed. Cars 61 through 66 were loaded placarded tank cars containing UN 1987-Alcohol N.O.S. The 65th head car, NATX 301415, a DOT 111 non-pressurized tank car, derailed and came to rest upright and at a 45-degree angle to the track. The car's "A" end was at the edge of the ballast on the south side of the track. The car's shelf coupler broke, but remained coupled to the car ahead. When the cars stopped, the top shelf of the broken coupler rotated and then pierced the end of the car, creating a leak of alcohol from the car. The puncture in the car was a gash measuring about one-inch long.

Emergency Response

The Momence police and fire department arrived on the scene within five minutes of the collision. Fire and ambulance services from Grant Park, Manteno, Aroma Park, Kankakee, Bradley, Limestone, Bourbonnais and St. Anne, Illinois responded to the accident site. The Kankakee County Sheriff's Department and the Illinois State Police also responded. At 8:30 a.m., the fire chief declared that a precautionary evacuation was needed of about 75 people from 25 homes near the derailed and leaking tank car on the NS train. The evacuation lasted until noon when everyone was allowed to return home except for the residents of three homes immediately adjacent to the leaking tank car. The rate of leakage was determined to be about two gallons per minute. The emergency responders felt that with the strong north wind and cold temperature, the leaking alcohol did not pose a great threat. The alcohol evaporated about as fast as it leaked from the car. The leaking tank car had buried itself in the ground when it derailed and had created its own self-containment dike at the leaking end. A chemical recovery firm was brought in by the NS and it used a tanker truck to transload the alcohol into the truck for removal from the site. The evacuation was lifted at 11 p.m. The alcohol in the remaining five tank cars was also transloaded into highway tanker trucks for removal from the site.

Illinois State Highway 1 (The Dixie Highway) was blocked by derailed cars until 11:30 p.m.

The fire from the burning diesel fuel from the derailed locomotives took the Momence Fire Department until 10:44 a.m. to extinguish. The large amount of diesel fuel (approximately 16,000 gallons) spilled by four locomotives was contained by sand, straw and containment devices placed by emergency responders. A drainage ditch next to the UP tracks was dammed with straw to stop the flow of the diesel fuel toward the

Kankakee River. Later, contaminated soil was removed and replaced. The UP removed 1,600 cubic yards of contaminated soil from the accident site near the crossing. A recovery well and trench was installed to collect oil that leaches out of the soil over a period of time. The well is pumped out twice weekly and this will continue for about two years.

Analysis

FRA Post-Accident Test results for the three UP employees were negative.
FRA Post-Accident Test results for the two NS employees were negative.
FRA conducted inspections of the track north of the accident site and found no deficiencies with the track structure.
FRA conducted inspections of the signal system approaching the accident site including the interlocking at Pence. FRA observed the railroad inspectors who conducted tests of the signal system and interlocking and took no exceptions to the system or the tests that were conducted.
FRA conducted an inspection of the cars of UP Train MCHNL-24 South. No exceptions were taken during this mechanical inspection of equipment. The event recorder retrieved from the train's trailing locomotive CN 6026 was analyzed. The event recorder from lead locomotive UP 1800 on Train MCHNL-24 South was retrieved, but yielded no data due to being excessively damaged from the collision. The event recorder from the lead locomotive of NS Train 10RB4-24 indicated that it was operated properly.
After interviewing the crew of southbound UP Train MCHNL-24, it was concluded that the student engineer had been left unsupervised by the locomotive engineer. The locomotive engineer vacated the cab of the lead locomotive UP 1800 about the time the train passed the Advance Approach signal. This was a critical time in the train's approach to the interlocking and the locomotive engineer was not present to advise the student engineer on proper train handling. The locomotive engineer's absence also eliminated a second pair of eyes to observe the absolute signal at the interlocking.
During an interview, the student locomotive engineer (FIT), stated that since starting to work for the UP sixteen months earlier, he had never been on a train that had to stop at the Pence Interlocking for a NS train. He was expecting the absolute signal to change to a "Clear" indication and was only slowing the train to 40 mph as required by the Advance Approach signal, and was expecting the Approach Signal to change to "Clear." Also, he indicated that he was concentrating so hard on getting the speed reduced to 40 mph that he did not remember even seeing the Approach Signal for the interlocking.
FRA also determined from the interview with the conductor of the train that he took no steps to stop the train when he observed that it was not going to stop for the interlocking absolute signal. He was riding in the second locomotive, which is a violation of the railroad's system special instructions, which require the conductor to be present in the cab and especially during what is called a "cab red zone environment," such as when approaching a signal displaying "stop" or operating at restricted speed.
In analyzing the employee's records, it was observed that the locomotive engineer had been an engineer since 1995 and had started work for the railroad in 1991 as a conductor. He was 52 years old at the time of the accident. He had been "stop tested" in the railroad's operational test program ten times in the last 365 days. His last "stop test" was November 16, 2005, which he passed. His last operational ride observation was on November 3, 2005. He was last re-certified in 2002 and was due for re-certification by July 25, 2006. His last operating rules exam was December 3, 2002.
In analyzing the conductor's records, it was observed that he had been a conductor since 1978 when he started work for the railroad. He was 46 years old at the time of the accident. He had been "stop tested" in the railroad's operational test program once in the last 365 days. His last "stop test" was March 20, 2005, which he passed. His last operating rules exam was February 25, 2005.
In analyzing the student engineer's records, it was observed that he had been a conductor since July 19, 2004, when he started work for the railroad. He had 16 months of railroad experience at the time of the accident. He had no prior railroad experience before starting work for the UP. He was 41 years old at the time of the accident. He had been "stop tested" in the railroad's operational test program eleven times in the last 365 days. His last "stop test" was on November 22, 2005, which he passed. His last operating rules exam was October 21, 2002, when promoted to conductor.
Analysis of the three crews' work history for the thirty days prior to the accident did not reveal any indications of long work cycles with minimal rest between assignments. Fatigue was not considered to be an issue in this accident. All three employees had well over the minimum required time-off-duty prior to commencing work on the day of the accident.
An analysis of the railroad's operational test data for the Villa Grove Subdivision revealed that a total of 839 type 1, 2, or 3 tests (various stop tests/restricted speed tests) under the UP operational testing program were conducted in the 365 days prior to when the data was obtained on November 28, 2005. There were four failures, which results in a failure ratio of 0.4 percent.

Conclusion

Two violations are being recommended against the railroad, for allowing an uncertified person to operate the controls of the locomotive (49 CFR 240.201 (d) and for failing to stop at the absolute interlocking signal displaying a “Stop” indication, (49 CFR 240. 305 a(1)).

Three operating rule exceptions are also being taken for the conductor not riding in the lead locomotive, not taking action to stop the train, and not riding in the lead locomotive during a cab “red zone environment.” System Special Instruction 1.30, Page 34 of UP Revised System Special Instructions, Effective 0001 Sunday, April 3, 2005, which requires the conductor to be present in the locomotive cab, System Special Instruction 1.47, Page 36 which requires the conductor to be present in the locomotive cab during a “cab red zone environment,” and System Special Instruction 1.47, C4, Page 37 which requires a crew member to take action to stop the train if a signal indication is not complied with.

FRA is also recommending to the railroad that the locomotive engineer not be allowed to act as “mentor” to any other locomotive engineer trainees (student engineers or FIT’s) in the future.

FRA is also issuing a Warning Letter to the locomotive engineer for vacating the locomotive cab and allowing an unqualified person to operate the locomotive without supervision.

As of May 1, 2006, the railroad has not held a hearing or conducted a formal investigation of the accident. The locomotive engineer has postponed the investigation per union agreements with the railroad. The three UP employees involved are being held out of service.

The railroad stated that there will be an additional emphasis in operational testing involving “stop tests” and tests at interlocking. Train crews will be counseled on the accident and the importance of rules compliance.

The causal factor of the accident is due to the locomotive engineer leaving the student locomotive engineer unsupervised in the locomotive cab, resulting in the crews’ failure to stop the train for the absolute signal displaying “Stop” at the Pence Interlocking.

A contributing factor is the conductor’s failure to ride in the lead locomotive as required by the railroad’s system special instructions.

A second contributing factor is the student locomotive engineer assuming that the Approach Signal would eventually change to a “Clear” indication, something it had always done on every trip he had made over the subdivision in his brief tenure as a conductor between Villa Grove and Yard Center.

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