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## **Incidence of Death from Electric Shock at Kuroiso Station Union Committee Investigation**

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### **1. Occurrence of Death from Electric Shock**

The accident occurred at 3:43 p.m. on September 17, 2008 in the station yard of Kuroiso Station located 100 km north from Tokyo on the Tohoku main line. A worker from one of the subcontractors died from electric shock. When he attempted to replace insulators, he mistakenly touched a pressurized 1,500 volt livewire. He was 32 years old and had devoted his life to the railway industry for 15 years.

In the Kuroiso station yard, there are two currents, AC (20,000 V) and DC (1,500 V), and wires are complicatedly mixed, so sometimes it is difficult for us to maintain the facilities. Also, this is only one special place where AC and DC are mixed in the JR East area. Locomotive engines, which use AC or DC, arrive, shunt and depart from the station. Feeding patterns here are complicated because of heavy traffic and usually the power cut time is for about 30 minutes to work with wires for which we are alerted.

If we neglect meeting to discuss procedure and safety, we might be killed because we have to work in the heavy traffic of trains and with electricity that we cannot see. To prevent accidents, people from JR East and subcontractors who are responsible for the work should carefully confirm power cuts, railway closures and areas of work, and then sign on the document after agreement. On the day of work after the meeting with workers involved in the work, we start the work. Thus, we have a system to check safety. This system has been established through lessons learned from incidents and accidents which occurred on the rail tracks.

However, why did such a fatal, tragic accident occur?

## **2. Setting up a “Cause Investigating Committee” in the Workplace**

We, the infrastructure workers group, JREU Omiya District Office, set up a “Cause Investigating Committee” in the workplace to investigate causes and make preventive measures. We held the discussion in the workplace.

### 1) Changing the work location

On the day the accident occurred, a total of 22 workers from three companies were working, including 3 supervisors from subcontracted company A who were on loan from B Company, which was a subcontractor of A company, 15 workers from C Company and 4 workers from D Company (C and D were subcontractors of B Company). They were replacing the insulators of messenger wire.

The worker who died was from D. He worked from the 10th to 13th of September, and from the 15th to 16th he worked consecutive night shifts. Then, on the 17th, he suffered the fatal accident.

- (1) On the 29th to 30th of August 2008, they worked at the same place. So they photocopied a “Safety Confirmation List” that had been used before. In this list, place X, where the accident occurred, had the electricity cut previously. So, they assumed the electricity was cut at the same places, X and Y.
- (2) A noticed that they had maintained place Y, so they intended to change to place X, where insulators had not yet been replaced.
- (3) A did not tell that they would like to change the plan and sent a facsimile of the original because A did not communicate with C and D to change.
- (4) After that A communicated with C and D, A decided that they could change the work place without permission, but did not notify that to JR.
- (5) They did not check electricity and did not complete the grounding which must be done before starting work.

Thus, they started to work at the place where electricity had not been cut. A did not check the “Safety Confirmation List” that was used in a meeting with C and D. A did not notify the change to JR, check electricity or complete grounding before

starting the work. These were the direct causes of the accident.

## 2) Cause background

- (1) A Company made a colored plan which it used in the security meeting, but the original plan became black and white after being sent to JR because JR does not use a color facsimile machine.
- (2) A wants to discuss the change of work and “Safety Confirmation List” with the JR Maintenance Centre, but cannot do so because there are not enough staff members there to carry out communication duties.
- (3) A has to apply for a plan of work three months in advance to cut power. So, it is difficult to change the work suddenly.
- (4) JR issues a “Work Permit Notice” two months before the work when A does not confirm a power cut at the planned site.
- (5) In this case, subcontractor A should dispatch their supervisors to the site, but instead B dispatched those who were loaned to A because A did not have enough supervisors.

## 3) Work in Heavy Traffic

- (1) Although usually we had to have enough time to work, in this case we had only 25 minutes because of heavy traffic and an AC-DC change point.
- (2) We have enough time only three times in the year during holiday seasons.

Through the discussion, we clarified the actual conditions at the work site and causes of the accident. This accident was not caused by mistake or lack of knowledge on the part of the workers involved, but instead caused by working circumstances. We delved into the problems.

### **3. Preventive Measures by the Company after the Accident**

A “Rule” decided by the company specifies, “Do not work without the power cut.” In other words, we must start the work only after the power is cut. After the occurrence of death from electric shock, JRE Omiya Branch concluded that the cause of this accident was violation of that rule, and to prevent recurrence they executed education for safety in a one-sided way. Employees from JRE and subcontractors had to take an examination

testing knowledge of safety rules. The Company implemented reeducation for safety rules, and then enforced an exam for which re-taking was mandatory until passed.

However, the company did not mention why the rule could not be followed, and the exam only enforced knowledge of the rule. I think that violation of the rule was not the only cause of the accident.

Moreover, the company enforced preventive measures as follows:

- (1) Check voltage detection with your own eyes
- (2) Introduce color facsimile machine
- (3) Do not change the work content after the meeting with JR
- (4) Enforce the safety patrol by JR

The above measures were not new, but were expected to receive renewed thorough enforcement. The company said that this accident occurred because workers on the work site did not follow the rule.

#### **4. “Investigation” by Union**

The JREU Omiya District Office immediately proposed demands and initiated collective bargaining with the Branch. We insisted that unless we identified the cause background, an “exam for knowledge” was useless, and asked on those grounds to stop it.

However, the company did not stop the exams, insisting that, “Basic rules should be followed, and at least known.” The JR Main Office issued orders to the branch; the branch itself could not speak to it as a rule of “Top-down bureaucracy.”

In the collective bargaining, union members who work with electricity expressed the following concerns: “Does the main office of JRE know the reality of the work site? Measures enforced by the company are not effective. The exam is not irrelevant, but it is important for us to investigate causes first.” However, the company did not accept our opinions. They maintained their opinion that the main cause of the accident was not following the rule.

Then, in our “Cause Investigation Committee,” we, as workers on the work site, discussed again, “Why the rule was not followed,” or, “How workers can follow the rule.” As a conclusion, we identified problems as follows:

- (1) The proper work force size does not exist in work places, in both JR and subcontractors.
- (2) The problems exist of complex subcontract procedure and too many cases of maintenance work to be done.
- (3) After senior employees retired and the maintenance system changed, young maintenance workers did not work in work sites. As a result of that, they do not have a hands-on knowledge of work at work sites.

These problems led to a violation of the rule, and not to the exploitation of safety equipment and facilities for JR and subcontractor employees.

## **5. Commission of Safety**

We discussed the problem of management policy. Eight years ago, the Company reorganized its infrastructure division. JR entirely manages infrastructures and subcontractors construct them. Subcontractors engage in construction work on site on the tracks and JR confides safety and preventive measures on site to subcontractors. However, “confident” often means “confident without responsibility.” In this case, the supervisors were from B Company, which was a subcontractor of A Company. They were on loan to A, so they were called “loaned supervisors.”

The structure of “confident without responsibility” is the same. It continues from JR to subcontractor A, A to B, B to C and D, and so on. Without “loaned supervisors,” a subcontractor cannot work for JR. On the other hand, when JR reaches a contracted agreement regarding work, “JR's work” and responsibility terminate, and JR moves on to another plan without checking on the process of the work. In reality, they do not perform construction work, but only know the number of completed projects.

These facts show the defect in our system. Unless we change this vicious cycle, a chain of accidents will continue forever.

Also, the fact that employees of JR and subcontractors concerned incidents and accidents cannot speak to the company because they are afraid of penalty threatens safety.

## **6. Our Challenge in the Future**

Based on the lessons learned from accidents that claimed many of our colleagues, we made rules and installed safety equipment. Of course, following rules is absolutely

necessary. However, if working conditions make it impossible to follow rules, they are useless as stones. I believe that it is very important for both union and management to listen to the opinion of workers on the work site.

In the future, we will:

- (1) ensure the required workforce size,
- (2) review outsourcing that affects maintaining safety,
- (3) thoroughly reexamine and review present preventive measures such as the "Safety Confirmation List," and
- (4) reconstruct the workplace environment in a way that makes the most of experience and skills.

We will create our own safety culture through learning from work places and listening to the truth from people involved with accidents, and build preventive measures. Without telling the truth, we cannot learn from accidents.

"Safety First! Work Site First!" "Do not blame but investigate causes," "Safety must be maintained by union and management"... we believe in our safety concepts. I think that union and management should discuss these issues seriously and advance in the common goal of railway safety. The company should listen to the opinions of workers on the work site.

We are workers on work sites who shoulder the ultimate responsibility of maintaining safety, and we will create safe railways believing in the value of human life.