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MPH 632 Assignment 10

The community in this scenario has a specific public health hazard with associated risks: the petroleum transfer station. This transfer station not only handles multiple shipments of petroleum each day, but it also handles mixing various additives with the fuels. This site has multiple hazards that affect public, occupational, and ecological health, and steps need to be taken to ensure the hazards are reduced. Below is a list of risk management recommendations in order of priority, with the most important at the top of the list. This list is to serve as a summary, while each recommendation will be expanded upon further in the report.

1. Wastewater from facility

- a. *Recommendation:* Ensure proper treatment of wastewater prior to disposal and that proper safety features are to be checked regularly for any repairs that need to be made

2. Multiple types of compounds on site

- a. *Recommendation:* Quarterly checks on ensure all safety booklets onsite are accurate and that first responders have the update list of chemicals kept at the facility in order to adequately respond to an emergency

3. Traffic from shipment trucks driving through town

- a. *Recommendation:* Ensure emergency action plans for vehicle accidents are up to date and require quarterly testing of the plans to ensure understanding

4. Traffic from ships

- a. *Recommendation:* Ensure emergency action plans for the port are up to date and require routine testing of the plans to ensure understanding

5. Above ground and underground storage

- a. *Recommendation:* Proper safety features are to be checked regularly for any repairs that need to be made

6. Proximity to landmarks in town

- a. *Recommendation:* Ensure emergency action plans for the school and downtown area are up to date and require routine testing of the plans to ensure understanding

7. Shipments on train

- a. *Recommendation:* Proper safety features are to be checked regularly for any repairs that need to be made as well as ensuring emergency action plans for the tracks are up to date and require routine testing of the plans to ensure understanding

The first recommendation, and the risk at the top of the priority list, involves the wastewater from the petroleum facility. Wastewater was selected to be a top priority due to the immediate impact untreated wastewater could have. Approximately 80% of the community relies on aquaculture and fishing to make a living, and untreated wastewater from the facility threatens their livelihood. If the wastewater is not treated correctly before disposal, there is a chance it can enter the waterways and eventually damage the industry many of the community members rely on. To reduce the risk of that happening, not only will safety checks need to be done to ensure the proper treatment of the wastewater before disposal, but also treatment equipment will need to be inspected routinely to monitor any damage to ensure proper functioning. These safety checks

will need to be recorded in a standardized database that can be accessed remotely in the case of emergency. Detailed record keeping can help to identify patterns in equipment failures or help to identify potential problems before they arise.

The second risk on the priority list involves the use of multiple compounds at the facility. If an emergency were to happen, first responders and public health officials cannot respond efficiently or correctly without knowing what compounds they are handling. To ensure the fluid transfer of knowledge, quarterly checks to ensure all safety booklets at the facility are accurate to allow staff onsite to make quick decisions. Additionally, when updates are made, they must be shared with local law enforcement, first responders, and public health officials. Officially, updated safety booklets should be accessible to all, including the public. Posting the most update to date version on the city's health department website is a simple step that ensures the information is public. By keeping the most updated version in everyone's hands, it helps to handle emergencies when they do happen and helps everyone communicate more clearly with the public.

The third and fourth risks deal with shipping and handling the product from the facility by truck and ship. Both pose potential risks to the community, but trucks were placed above ships on the priority list due to the increased chance of accident based on more external factors: inclement weather, pedestrians, and civilian drivers. If a truck carrying petroleum gets into an accident, it could leak into the community's waterways and contaminate the source. Additionally, if a ship carrying petroleum is in an accident at the port, contamination can also occur. Despite two separate risk scenarios, the risk management recommendations for the two are similar in that the facility wants to ensure their emergency action plans for both vehicle and ship accidents are up to date and that routine testing of the plans is implemented to help ensure

understanding. Additionally, routine safety training for staff at the port and emergency personnel who would respond to an incident on main street should be incorporated into company workflows. Training staff and ensuring the information stays relevant in people's minds will reduce the chance of error when responding to an emergency.

The fifth risk on the list deals with the above-ground and underground storage containers for the product. These containers can easily break and result in an emergency, so to reduce the chance of an accident occurring, routine safety checks need to be performed to identify any potential repairs that need to be made. Additionally, these containers may be accessed readily by the staff on-site to switch products, so implementing safety features such as guard rails can help to reduce the chance of a staff member falling into the containers. And, similar with the recommendations for items 3 and 4, routine safety training for staff should be incorporated into the company's policy. Human error is possible in any situation, but ensuring that staff are up to date on safety policy can help to reduce this chance.

The sixth risk has to do with the location of the facility. The facility is located near both the downtown area of the community as well as an elementary school. In the event of an emergency, there is a chance these locations will need to be evacuated for everyone's safety. To best prepare for an evacuation, emergency action plans for both locations need to be updated and routinely checked for potential updates. Such plans can include evacuating to a certain location, such as the movie theater located 30 miles west. Giving people an exact location can help reduce miscommunication during an evacuation. Additionally, routine testing of the plans will help to ensure everyone knows their roles in the event of an emergency. Testing should include both emergency personnel as well as the public, as both evacuations include the community. For the elementary school, drills can be incorporated into their schedule to run alongside fire drills and

tornado drills. For the downtown area, quarterly test messages can be streamed on radios, phones, and televisions to ensure communication pathways are working. Since the public is involved, the action plan should be posted on the city's health department website so citizens can be prepared and act accordingly. The final risk included in this report surrounds the product shipments on the trains. While the trains may not directly impact the community depending on where on the tracks an accident happens, it is important to prepare for any potential emergency. To reduce the chance of an accident, safety features should be checked regularly for any repairs as well as ensuring the emergency action plan for train emergencies are up to date and tested routinely.

While this report only covers seven risks associated with the petroleum facility, it must be noted that it has been assumed that routine checks will be made to evaluate the effectiveness of these recommendations, and that new risks can arise from these changes or the risks can change depending on external factors. Risks are ever changing and are not set in stone, but these recommendations can help to reduce the current risks associated with the petroleum facility.