ABSTRACT

Warehouse is an important part in the supply chain. The function of the warehouse in this modern era is not just a place of storage. In the current manufacturing industry, there are several types of warehouses, including raw material warehouses, packaging raw materials warehouses, semi-finished product warehouses, and finished product warehouses. PT. X is a manufacturing industry that operates in the field of snacks. PT. X has a variety of snacks that often change packaging and there is also a cessation of snack production which results in a buildup of unused packaging materials in the warehouse. Other risks arise related to the accumulation of goods due to changes and discontinuation of packaging use. PT. X does not yet have a risk mitigation plan related to packaging raw material warehouse activities. Therefore, a mitigation design is needed for the warehouse activities of PT. X.

This study designs risk mitigation activities for packaging raw materials at PT. X. This design begins by mapping the activities of the raw material warehouse into the Supply Chain Operation Reference (SCOR). From this mapping, it is possible to identify risks that are occurring or that may occur. Then carried out a risk assessment with Failure Mode and Effect Analysis (FMEA). The assessment is assessed based on the scale of severity, occurrence, and detection. Calculation of the Risk Priority Number (RPN) is obtained based on the multiplication of the assessment of severity, occurrence, and detection. The results of the RPN calculation produce a risk priority sequence for each process. The risk is then designed alternative mitigation that can help reduce or eliminate the associated risk. The Analytical Hierarchy Process (AHP) method is needed to help decide the best mitigation alternative for each risk.

The results of this study were identified a total of 17 risk events in the warehouse activities of packaging raw materials and 29 causes or sources of risk in the activities of warehouse packaging raw materials PT. X. Risk identification is grouped according to the core processes in SCOR, namely source, deliver and return. In the source process there are 6 risk events and 13 risk sources where the

highest risk source is selected with an RPN value of 216 and the best mitigation alternative for that risk has a weight of 0.596. In the deliver process there are 8 risk events and 13 risk sources where the highest risk source is selected with an RPN value of 224 and the best mitigation alternative for that risk has a weight of 0.512. And in the return process, there are 3 risk events and 3 risk sources where the highest risk source is selected with an RPN value of 144 and the best alternative mitigation for that risk has a weight of 0.682.

Keywords— ***Warehouse, Supply Chain, Risk Management, SCOR, FMEA, AHP***