

CHAPTER V

CONCLUSIONS

5.1 Conclusions

The preceding chapter on data collection and analysis explained data collection, data processing, and improvement solutions, and suggested supporting documentation for control in the Metal Work manufacturing line at PT Citra Interlindo. As a result, the following conclusions can be derived from this study:

1. Based on the calculations that have been carried out at the measure stage, the metal work yield percentage value of 97.7898% belongs to the sigma value of 4.02. This value shows that the Metal Work Plant at PT Citra Interlindo belongs to the average level of industrial capability.
2. Based on the results of interviews, direct observations, and historical data obtained from the Metal Work Plant at PT Citra Interlindo, three types of defects often occur in the metal work production process. The first is a scratch defect referred to as Kizu. The main factor that causes this defect is the worker's error when taking the material which caused the metal sheet to be scratched by nails or materials rubbing against each other. The second type of defect is wavy defect referred to as Nami. The main factor is the presence of gram build-up caused by workers not routinely cleaning dies and machine work areas using air spray. So that when the press process is carried out, there are metal sheet surfaces that are not exposed to the process properly and cause waves. The third type of defect is defects with sharp sides referring to Burry. The main factor is that the dies used are worn out to produce products with sharp side defects caused by imperfect press or shearing processes. The supporting factors for the three types of defects can be seen in **Figure 4.10**, **Figure 4.14**, and **Figure 4.15**.
3. After analyzing the three types of defects in the aspects of man, machine, method, material, and environment, proposed solutions can be determined

that can help PT Citra Interlindo overcome the factors that cause these defects. The proposed solutions are ensuring transparency in contractual agreements for maintaining effective partnerships with existing suppliers, looking for suppliers who are capable of meeting the precise material specifications, making a check sheet for monthly checking of dies and machines periodically, changing maintenance techniques from corrective maintenance to preventive maintenance, scheduling for maintenance, conducting regular monitoring to ensure workers work according to the SOP and work instructions given, making improvements related to safety SOP and work methods in the work environment area that regulate the use of gloves and material handling following the needs, improve work instructions that are appropriate for the pressing process with a manual press machine, improve work instructions for cleaning dies and machine areas, add blowers to the area around the manual press machine, and add equipment and material handling. Due to limitations related to permits, time, and individual factors, the direct implementation of the proposed solution at the Metal Work Plant of PT Citra Interlindo is not currently feasible.

5.2 Suggestions

In addition to completing this study, the following recommendations can be taken for further relevant studies in the future:

1. The observed production lines can be extended to Plant I and Plant II of PT Citra Interlindo which not only produce metal work products but also medium voltage electrical equipment products. Thus, quality improvement for all types of products produced by all production lines can be known.
2. To ensure the recommendations are performing as expected or if still need adjustments, implement the proposed improvements.
3. Putting the suggested control document and solutions into action will assist in managing the quantity of defects and enhancing the quality of the

products. This, in turn, will allow the company to achieve the goal of enhancing the company's reputation with customers and reducing production costs.

4. PT Citra Interlindo should record and recap company data more properly because sometimes this company data is needed for the improvement process within the company so that the company can continue to compete.

