With the expansion of robotic applications in the industrial domain, it is important that the robots can execute their tasks in a safe and reliable way. A monitoring system can be implemented to ensure the detection of abnormal situations of the robots and report the abnormality to their human supervisors or cooperators. In this work, we focus on developing a modeling framework for monitoring robotic system based on means-end analysis and the concept of action phases from action theory. A circular cascaded action phase structure is proposed for building the model of cyclical robotic events. This functional model provides a formal way of decomposing robotic tasks and analyzing each level of conditions for an action to be executed successfully. It can be used for monitoring robotic systems by checking the preconditions in the action phases and identifying the failure modes. The proposed method is demonstrated by using a simulated robotic manipulation system. The simulation results demonstrate the feasibility of the developed functional model in finding errors during the execution monitoring.