

Design And Analysis of Programmable Interface based Load Shedding

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Abstract: This Load Shedding is a procedure by which the authority of electricity handles the inadequacy of the electrical power consumed by the consumers. The paper presents the load shedding management using programmable interface instead of manual ON and OFF systems. Load shedding is a blueprint which is applied when there is not sufficient electricity present to accommodate the high demand of user, and power supply or service community halt the energy accumulation to particular areas.

IndexTerms – IDE, RTOS, MC.

I. INTRODUCTION

Load-shedding is a strategy through which the electricity division manages the inadequacy of the electricity consumed by the society. Shedding process has been done to reduce the load of electricity usage in a society via different substations that are linked to the main power station. During the low frequency of voltage, the generator deteriorates to fabricate the recommended voltage. Under the circumstances authorization lacks to provide the expected quantity of electricity which impels the authorization to execute a shedding. To symmetry the availability and the demand of electricity the concerned authorization has to implement the load shedding process. The load-shedding process is more vulnerable to human mistakes as a machinist has physically switched the load ON/OFF. We can present a well-organized and inexpensive solution to execute this procedure significantly from one centralized place, we will be able to change the physical system with a sophisticated consolidate computerized system. On the term of overload, automated load shedding balance the power quantity of wide-ranging production line through the prearrange detachment of consumers, by that assuring the central procedure remain under control in demanding location and extravagant downtimes are avoided. This purpose is specifically important when grid balance is at risk at critical happening. In this instance, low precedence consumers are interrupted in order to rehabilitate the balance between energy creation and utilization. India is facing an amorously increase in electricity consumption. A direct effect of these increase demand is the enormous load burden that has been appoint on the communal electricity grid, especially during peak appeal periods. One answer to this dilemma would be lode shedding is an action in which electric power is cutoff on certain lines of power transformers when the demand way

the system capacity. Load shedding is specifically important in confined systems (islands of service) since there is no complementary supply of power if the demand outSpace the power value of the transformers. Typically load shedding is done by central and monitoring systems such as central control and data acquiring systems.

II. PROBLEM DEFINITION

Energy is the basic necessity for the economic development of a country. Many functions necessary to present-day living grind to halt when the supply of energy stops. It is practically impossible to estimate the actual magnitude of the role that energy has played in building up present-day civilization. In this modern world, the dependence on electricity is so much that it has become a PART & PARCEL of our life. So we need to save more & more electrical power. The work is a programmable interface based operation system that controls load operation, multiple numbers of times according to programmed instructions. The system will exclude the manual ON/OFF switching of load. This system is required for load shedding time management which is used when the electricity demand exceeds the supply and there comes a need for manually switching ON/OFF operation.

III. METHODOLOGY

The research methods deployed in this work critically examined the various technologies and methods used globally in the automation of load shedding system with the sharp focus on technological implication used in developing such systems. The whole research is based on simulation developed using proteus with keil for logic building. The proteus design suit is a proprietary software tool used mainly for electronic design automation. This is used by electronic engineers and technicians to create schematic and electronic prints for circuit boards. Keil provides a huge range of tools like debuggers, simulators, IDE, compilers, macro assemblers, RTOS, library managers for Intel 8051MC. Keil is a complete software development environment for a wide range of microcontroller devices.

IV. RESULTS

The results are very important for research and development work to prove the problem definition practically. The results obtained using Proteus and Keil are mentioned below:

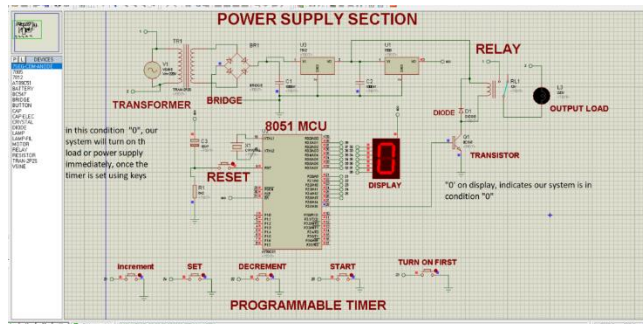


Figure: Specifying the condition “0”, our system will turn on the load or power supply immediately, once the timer is set using keys

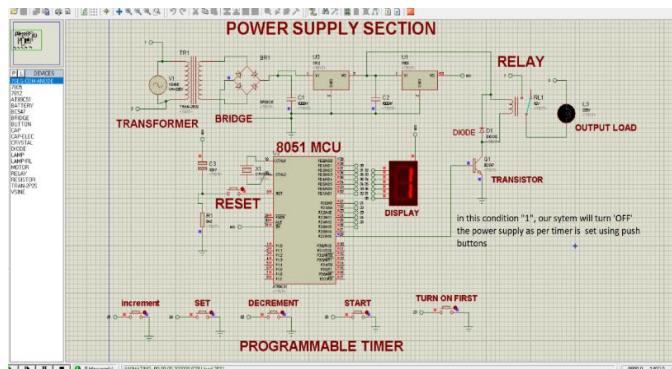


Figure: Specifying the condition “1”, our system will turn “OFF” the power supply as per timer is set using push buttons.

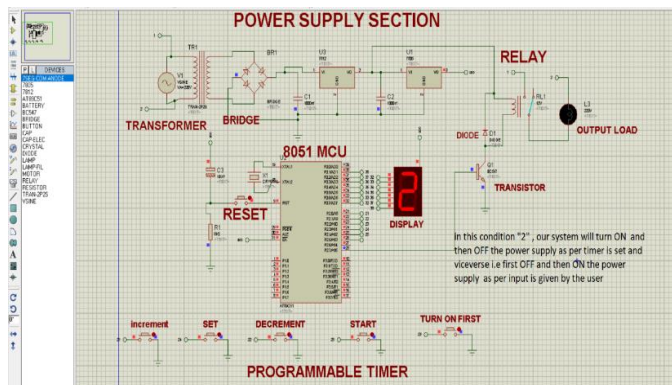


Figure: Specifying the condition “2”, our system will turn ON and OFF the power supply as per timer is set and vice versa i.e., first OFF and then ON the power supply as per input is given by the user.

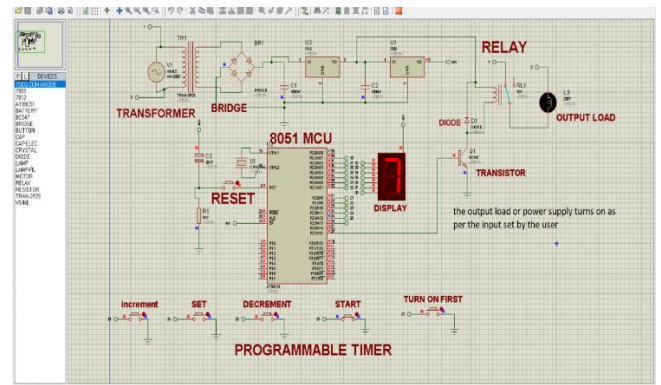


Figure: Specifying The output load or power supply turns ON as per the input set by the user

V. CONCLUSION

The paper presents the programmable based load shedding system helps in improving the quality and stability of power system. The technologies and infrastructure are designed to be in place and will take care of all the challenges and vulnerabilities of automatic load shedding system. The system is technically feasible therefore nothing should prevent the transition into the smart load shedding system.

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