



ACHIEVEMENT PROGRAM MODEL RAILROAD ENGINEER ELECTRICAL STATEMENT OF QUALIFICATIONS FORM May 2006

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Member's Name: _____ NMRA #: _____ Exp: _____

Street: _____ City: _____ State/Prov: _____

ZIP/PC: _____ Country: _____ NMRA Region: _____

Date Submitted: _____ E-Mail: _____ Phone: _____

To qualify for this certificate you must:

- Construct and demonstrate on your own or a club layout, the satisfactory operation of an electrical control system on a model railroad capable of simultaneous and independent control of two mainline trains in either direction, and containing at least:
 - DC Power – 5 blocks that can be controlled independently
 - DCC/TMCC/Other Power – gaps, switches, phase for troubleshooting
 - Wye
 - Facilities for storing of at least two unused motive power units.
 - One yard with a minimum of three tracks and a switching lead independent of the mainline.
 - One power supply with protective devices (short indicator and/or circuit breaker) to ensure safe operation.
 - One passing siding
 - One reverse loop
 - Turntable
 - Transfer table.
- Wire and demonstrate the electrical operation of at least three of the following items:
 - Turnout
 - Crossing
 - Crossover
 - Double crossover
 - Single slip switch
 - Gauge separation turnout
 - Double junction turnout
 - Three way turnout
 - Gauntlet turnout
 - Spring switch
 - Operating switch in overhead wire
- Wire and demonstrate the satisfactory electrical operation of at least three of the following features:
 - Electrical turnout position
 - Track occupancy
 - Cab control
 - Engine terminal
 - Two turnout junctions
 - High-frequency lighting
 - Electronic throttle
 - Grade crossing
 - Two-way block signaling
 - Operating overhead wire
 - Computer control
 - Animated displays
 - Layout lighting displays
 - Command Control Receiver
 - Command Control Throttle Buss Line
 - Sound system
 - Signaling system
 - CTC system
 - Onboard video system
 - Computerized block detection
 - Computerized operation
 - Computer to railroad interface
 - Other _____
- Prepare a schematic drawing of the propulsion circuitry of the model railroad in Section 1 showing the gaps, blocks, feeders, speed and direction control, electrical switches and power supplies.



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5. Prepare schematic drawings identifying the wiring and components of the six items in Requirements 2 & 3.

6. Submit a completed Statement of Qualifications (SOQ) which shall include the following:

- Attachment showing the track plan required in Requirement 1.
- Description of the track work features, method of construction and identification of commercial components used in 2 & 3.
- The signed witness certification form showing that each of the above items are operational and meet all applicable NMRA Standards.

JUDGE'S NAME	SIGNATURE	NMRA #

Member's Statement and Agreement:

I certify that I have completed all of the requirements for this Certificate of Achievement as listed above and that I will agree to assist other members in this subject whenever possible, whether or not they are participants in the Achievement Program.

NAME: _____ SIGNATURE: _____ Date: _____

Certification of Regional Achievement Program Chair

As the NMRA Regional Achievement Program Chair of the _____, I certify that I have examined this SOQ and, having compared it to the stated requirements for this certificate, I am satisfied that the stated requirements have been met.

NAME: _____ SIGNATURE: _____ Date: _____

Region Cert #: _____

Approval by AP National Executive Vice-Chair

NAME: _____ SIGNATURE: _____ Date: _____

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