

ACHIEVEMENT PROGRAM MODEL RAILROAD ENGINEER ELECTRICAL STATEMENT OF QUALIFICATIONS FORM February 2019

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

Street: _____ City: _____ State/Prov.: _____

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

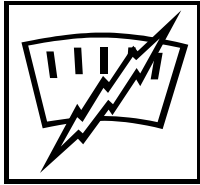
Date Submitted: _____ E-Mail: _____ Phone: _____

To qualify for this certificate you must:

- Construct and demonstrate on your own, someone else's layout, 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:
 - If DC Power – 5 blocks that can be controlled independently
 - If DCC/TMCC/Other Power – gaps/switches/phase for troubleshooting
 - One Reverse Loop or Wye or Turntable or Transfer Table
 - One passing siding
 - 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.
 - Other _____
- Wire and demonstrate the electrical operation of at least three of the following track items:

<input type="checkbox"/> Turnout	<input type="checkbox"/> Single slip switch	<input type="checkbox"/> Gauntlet turnout
<input type="checkbox"/> Crossing	<input type="checkbox"/> Gauge separation turnout	<input type="checkbox"/> Spring switch
<input type="checkbox"/> Crossover	<input type="checkbox"/> Double junction turnout	<input type="checkbox"/> Operating switch in overhead
<input type="checkbox"/> Double crossover	<input type="checkbox"/> Three way turnout	<input type="checkbox"/> Other _____
- Wire and demonstrate the satisfactory electrical operation of at least three of the following features:

<input type="checkbox"/> Electrical turnout position	<input type="checkbox"/> Two-way block signaling	<input type="checkbox"/> Sound system
<input type="checkbox"/> Track occupancy	<input type="checkbox"/> Operating overhead wire	<input type="checkbox"/> Signaling system
<input type="checkbox"/> Cab control	<input type="checkbox"/> Computer control	<input type="checkbox"/> CTC system
<input type="checkbox"/> Engine terminal	<input type="checkbox"/> Animated displays	<input type="checkbox"/> Onboard video system
<input type="checkbox"/> Two turnout junctions	<input type="checkbox"/> Layout lighting displays	<input type="checkbox"/> Computerized block detection
<input type="checkbox"/> High-frequency lighting	<input type="checkbox"/> Command Control Receiver	<input type="checkbox"/> Computerized operation
<input type="checkbox"/> Electronic throttle	<input type="checkbox"/> Command Control Throttle Bus	<input type="checkbox"/> Computer to railroad interface
<input type="checkbox"/> Grade crossing	<input type="checkbox"/> Sound in Locomotive	<input type="checkbox"/> 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.

EVALUATOR'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 Region Achievement Program Chair

As the NMRA Region 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 Certificate #: _____

Approval by AP National Executive Vice-Chair

NAME: _____ SIGNATURE: _____ Date: _____