



POWAY STATION
ALL SCALE MODEL RAILROAD CLUB
a California 501c3 Non-Profit Corporation
www.powystation.org

HO MODULE AND TRACK CERTIFICATION PLAN

This document describes the steps to be followed to certify that a module complies with the Poway Station MODULE AND TRACK STANDARDS AND RECOMMENDED PRACTICES in effect as of the date of certification, or an accommodation negotiated with the Standards Committee and approved by the Board. It can also be used by the member as a plan of procedure for module construction. Use of a checklist (attached as Exhibit 1) is encouraged. A copy of the checklist should be retained by both the Board and the member.

TABLE OF CONTENTS

HO MODULE AND TRACK CERTIFICATION PLAN..... i

I. Pre-construction planning consultation..... 2

II. Preliminary construction..... 2

III. Track installation and wiring connectors..... 3

IV. Scenery and Coloration..... 5

V. Final Review and Certification..... 5

Attachment 1: Certification Checklist

Attachment 2: Deficiency Report

I. Pre-construction planning consultation

Discuss with the member their plans and/or desires for building a module(s), and how it (they) will fit with the existing layout. Identify potential problem areas and discuss proposed solutions. If an accommodation is required, assist the member in preparing justification to be submitted to the Board for approval. (General Standards, ¶ 4)

II. Preliminary construction

Steps A through E should be certified before any part of the module is painted, and before track and roadbed are installed.

- A. Determine that the module frame is square. (NMRA Module Standards, Introduction; Poway Station Module and Track Standards, ¶ I.B.1.c.)
- B. Determine that the top does not extend past the frame at the ends. (NMRA Module Standards, Introduction; Poway Station Module and Track Standards, ¶ I.B.1.d.)
- C. Determine that the module top is flat (does not bow or dip). (NMRA Module Standards, Introduction; Poway Station Module and Track Standards, ¶ I.A.1.c.)
- D. Determine that the fascia (Plexiglas holder) is properly installed. (Poway Station Module and Track Standards, ¶ I.B.1.b.)
- E. Determine that the skyboard is installed at the proper height, and provides for transition to adjoining modules if necessary. (Poway Station Module and Track Standards, ¶ I.A.1.c.)
- F. Determine that the module is properly painted
 - 1. Primed, all surfaces (Poway Station Module and Track Standards, ¶ II.B.1.c)
 - 2. Base-coated with club standard earth tone for module top (Poway Station Module and Track Standards, ¶ I.B.1.a.)
 - 3. Base-coated with club standard sky blue for skyboard (Poway Station Module and Track Standards, ¶ I.B.1.a.)
 - 4. All other surfaces (except underside if desired) painted flat black (Poway Station Module and Track Standards, ¶ I.B.1.a.2))

III. Track installation and wiring connectors

Track certification should be done without ballast in place, and before track is painted. Wiring should be completed.

- A. Determine that the roadbed is properly located and securely fastened to the module top. (Poway Station Module and Track Standards, ¶ I.A.2.a.)
- B. Determine that the track components are Code 83 and are properly located, aligned, and fastened to the roadbed. This includes passing sidings (tracks 0 and 3), if present. Use the standard club template for this, drilling mounting holes and installing joinery plates if necessary. (Poway Station Module and Track Standards, ¶ II.B.2.b.)
- C. Determine that the track components are properly gapped where necessary, and that all gaps are filled, and all other joints soldered. (NMRA Module Standards, MS-1.3 and Poway Station Module and Track Standards, ¶ I.A.2.b.)
- D. Determine that the track feeders are properly soldered. (NMRA Module Standards, MS-1.3)
- E. Verify that there is no grade in the mainline. (Poway Station Module and Track Standards, ¶ II.A.2.a.)
- F. Verify that there is at least seven inches (7”) of parallel tangent track from the module “Frontier” before any deviation, unless a variance has been granted. (Poway Station Module and Track Standards, ¶ II.B.2.d.)
- G. Determine that all turnouts operate properly (main line turnouts should be powered). (Poway Station Module and Track Standards, ¶ II.B.2.a.)
- H. Determine that the electrical continuity of the module is valid, by temporarily connecting the module to a certified module or test track and running one or more locomotives on the new module, without shorting the circuits. (NMRA Standards, MS-1.3, S-9)
 - 1. Verify that all connecting plugs are properly color-coded. (NMRA Module Standards, Introduction)
 - 2. Run a locomotive through all track on the module. (NMRA Standards, S-9)
 - 3. Operate all turnouts (Poway Station Module and Track Standards, ¶ II.B.2.a.)
 - 4. Validate the isolation of any section of track that should be isolated. (NMRA Module Standards, MS-1.3)

**POWAY STATION
HO MODULE AND TRACK CERTIFICATION PLAN**

Page 4 of 5

- I. For corner modules, check the radii of the main lines.
 - 1. The smaller (inside) radius should be at least 30 inches, preferably 34 inches or more. (Poway Station Module and Track Standards, ¶ I.A.2.c.)
 - 2. The larger (outside) radius should be at least 32.5 inches, preferably 36.5 inches or more. (NMRA Module Standards, MS 1.0 and (Poway Station Module and Track Standards, ¶ I.A.2.c.)

- J. If overhead obstructions exist in the mainline (tunnel portals, bridges, etc.), verify clearance.
 - 1. Verify that vertical clearance is at least 3.5 inches from the top of the rail to the bottom of the obstruction(s). (Poway Station Module and Track Standards, ¶ I.A.2.e.)
 - 2. If the obstruction exists on a mainline curve, verify that a 53 foot double stack and an 89 foot auto rack (or Automax) will clear the obstruction(s). Use actual car(s) for this step, not the NMRA clearance gauge, because the clearance gauge does not provide for the dimensions of these newer cars. (Alternatively, create a clearance gauge using the Plate H diagram in the Poway Station Standards.) (Poway Station Module and Track Standards, ¶ I.A.2.e.)

- K. With track properly installed and aligned, set module on its legs and verify the track height.
 - 1. Verify that the proper PVC feet are installed on the legs. (Poway Station Module and Track Standards, ¶ II.A.1.a.)
 - 2. With the feet set to the normal position, the top of the rail should be forty inches (40”) above the floor. (NMRA Module Standards, Introduction)
 - 3. The feet should provide adjustment such that the rail height can be set at any distance from the floor between thirty nine inches (39”) and forty-one inches (41”) above the floor. (Plus or minus one inch adjustment) (NMRA Module Standards, Introduction)
 - 4. Verify that the legs are of sufficient construction to support the module. (Poway Station Module and Track Standards, ¶ II.A.1.a.)

- L. Verify that there are no permanent magnets installed in the mainline. (Poway Station Module and Track Standards, ¶ I.B.3.a.)

- M. Examine the general construction materials and determine whether additional support bracing should be added. (NMRA Module Standards, Introduction; Poway Station Module and Track Standards, ¶ II.A.1.b.)

IV. Scenery and Coloration

This section should be completed after the previous steps have been done, and after ballast and basic scenery have been installed.

- A. Verify that the mainline ballast is the proper size and color. (Poway Station Module and Track Standards, ¶ I.A.3.b.)
- B. Verify that scenery does not overhang the ends of the module such that it may interfere with proper joining to the adjacent module(s).
- C. If tunnel portals or other overhead obstructions exist that were not present during step II.J above, perform that verification at this time.

V. Final Review and Certification

Perform a final review and spot-check previous certifications to be sure nothing has changed that would adversely affect operations on the module. If the module will be boxed, examine the box to verify the end caps have appropriate glides installed. If no further work remains, certify the module. Give one copy of the certification checklist to the member and file one with the club Secretary.