

**LOG OF MEETING
DIRECTORATE FOR ENGINEERING SCIENCES**

SUBJECT: Meeting of the ASTM F24 Evolution Task Group II to discuss Manufacturing/Operations/Maintenance requirements for amusement rides

DATE OF MEETING: January 10, 2018

PLACE OF MEETING: Virtual (teleconference)

LOG ENTRY SOURCE: Mark Kumagai (ESMC)

COMMISSION ATTENDEES: Mark Kumagai (ESMC),

NON-COMMISSION ATTENDEES: Contact ASTM for attendee list.

SUMMARY OF MEETING: The task group meeting consisted of a review December 13, 2017 meeting minutes and a discussion of the following topics (see attached Meeting Agenda, EVO Group II WebEx – January 10, 2018).

The group discussed the proposed language to address corrosion (see attachment of the meeting agenda). The group discussed various inspection procedures that an owner/operator could use to determine if the ride could operate. The proposed draft language to address corrosion was:

8.15 *Corrosion* – In the event of corrosion, the manufacturer shall provide one or more inspection procedures to the owner/operator, based on the ride's physical location and using the Corrosion Severity Algorithm. The inspection procedures may be the following:

- (1) Minimum material thickness for components sensitive to corrosion as determined by the ride analysis.
- (2) Maximum allow corrosion grade as specified in ISO 8501 for any uncoated steel surfaces
- (3) An alternative inspection procedure as determined by the manufacturer and the ride analysis.

The group was concerned that a corrosion requirement that is not based on a Go/No-go such as material thickness could be ambiguous. Some members of the group indicated that manufacturers were not willing to provide the owner/operator a minimum material thickness for a ride to operate safely. One member volunteered to further investigate potential Go-No-Go criteria.

A member notified the group that the Ohio State police has completed their report on the ride incident. He said the report contained many photographs that could be useful.

Next Meetings – the next meetings were scheduled for January 10, 2018, 11:00 PDT and February 7, 2018 at 11:00 PDT.

Cc: Caton, McCallion, Edwards,

Meeting Agenda

EVO Group II WebEx - January 10, 2018

- I. Meeting Minutes to be Approved (Attachment 1)
 - II. Old Business
 - a. Comments to EVO Group I Language
 - i. How was "10-year requirement" determined for §6.1.3?
 - ii. How is information, typically originating in the ride or device analysis, to be passed down to the manufacturer/owner/operator in §6.1.2?
 - iii. Need language in §6.1.2 to require manufacturer/owner/operator to sign-off on receipt of said documentation from designer/engineer.
 - iv. Need to add language to §6.1.4 that limits to "...no longer in business *and no program of maintenance that meets the requirements of §6.1.2 exists*, the owner/operator shall retain an engineer..."
 - v. Need language in §6.1.4 to specify the qualifications of said engineer.
 - vi. Need to add §6.1.4 to F2291 also.
 - III. New Business
 - a. Review Attachment 2 – Tony's update to Task #1B
 - b. Review Attachment 3 – Nicola's revision to Task #2
 - c. Review Attachment 4 – Eric's revision to Task #3
 - d. Review Attachment 5 – Alan's revision to Task #4
 - e. Review Attachment 6 – Ballot Preparation Format
 - IV. Next Meeting(s)
 - a. February 7, 2018 11:00 PDT
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Attachment 1

Meeting Minutes - December 13, 2017

ASTM EVO Group II Call / WebEx – December 13, 2017

Alan Black began by explaining that he had recently been able to sit in on the recent Group I call. He asked for comments on the notes sent out from the previous call. No one spoke up with any comments or concerns.

We skipped over the Old Business items on the agenda as they were simply a recap of the previous call. Alan began walking the attendees through the items listed as New Business.

1) Review of the work EVO Group I is doing.

We briefly reviewed a summary of their progress. Several individuals had comments during the discussion. Alan asked that any comments be sent to Tony and himself to be compiled and sent back to Group I for consideration. Comments captured during the discussion:

- a. Rick Achard asked how Group I determined the 10-year requirement as stated in the proposed F770 - 6.1.3.
- b. Mike Mehlhorn asked how an owner/operator could be expected to accomplish the requirement listed in proposed F770 - 6.1.2 since there is not an action requirement in the language other than to consider something. He further pointed out that each of these items is already required in F2291 to be addressed by the designer/engineer as a part of the Risk Analysis and any necessary mitigations passed down to the manufacturer and owner/operator.
- c. Tony Claassen suggested that Group I should word it in such a way that the owner/operator is required to verify receiving necessary documentation from the manufacturer or designer/engineer and to follow the suggested mitigation requirements.
- d. Rich noticed that the language in the proposed F770 - 6.1.4 & 6.5.1 imply that an owner/operator must retain the services of an engineer for a ride where the manufacturer is out of business, whether they need the services of that engineer or not.
- e. Eric Wilcox suggested that Group 1 should specify the qualifications of the engineer mentioned in the proposed F770 - 6.1.4.
- f. Mike suggested that the language in the proposed F770 - 6.5 & 7.5 be included in F2291 as well.

2) Discussion of the proposed language for Task #1B.

Task #1B - Require operators to maintain all records for maintenance and major modification for every amusement ride or device; these records will be made available to any Authority Having Jurisdiction (AHJ).

- a. Nicola Sobol & Michelle Faulk pointed out that the proposed language does not require an owner/operator to have a retention policy.
- b. Tony Claassen explained that the language was consistent with currently published language in F2291, but it is simply a starting point and we can change it as desired.
- c. Mike Mehlhorn suggested that we should push for the documentation to be kept indefinitely and Alan Black agreed.
- d. Rick Achard also agreed, but pointed out that many lawyers may not.
- e. Mike suggested rewording the proposed language to eliminate any reference to a record retention policy and simply require the records to be maintained.
- f. Other attendees like that idea.
- g. Mike also suggested placing the proposed language in the list of items currently in F770 - 6.1.
- h. Tony agreed to take these comments into consideration and send out a revision.

Attachment 1

Meeting Minutes - December 13, 2017

3) Discussion of the proposed language for Task #2.

Task #2 - Require manufacturers to provide ride analysis information to the owner/operator as part of the records for the amusement ride or device.

- a. Nicola Sobol explained the information she reviewed and the language she wrote stating that it was consistent with what is found in the EN and ISO standards.
- b. Alan Black asked if there was anything more specific regarding the information that must be considered.
- c. Nicola pointed out that F2291 section 5.1 is already quite extensive and the point is to make sure the results of the analysis are passed on to necessary parties.
- d. Mike Mehlhorn liked where this was going and suggested perhaps pointing to the appropriate section of F1193 rather than F2291. His reasoning being the general flow of the standards requires the owner operator to get deliverable documentation from the manufacturer, not necessarily from the designer/engineer.
- e. Nicola agreed to take these comments into consideration and send out a revision.

4) Discussion of the proposed language for Task #3.

Task #3 - Require manufacturers to provide owner/operators thickness of structural materials in supplied drawings.

- a. Eric Wilcox explained the proposed language, information, and sources submitted for review. He asked the group to consider if this is a valid direction to resolve this task.
- b. Alan Black stated that it was relatively simple and that while there are volumes of documentation on corrosion available, we do not want to create an encyclopedia for corrosion control. He asked if the group thought we need to develop a stand-alone corrosion standard.
- c. None of the attendees seemed to like that idea.
- d. Mike Mehlhorn said he liked where Eric was going, especially the three options. He suggested repeating the same language in F2291 and require that it is passed on to the manufacturer and owner/operator.
- e. Monty Jasper agreed.
- f. Alan agreed and pointed out that there seems to be a disconnect between engineering and the owner/operator.
- g. Eric agreed to take these comments into consideration and send out a revision.

5) Discussion of the proposed language for Task #4.

Task #4 - Add welding requirements within F770 (copy and paste 1193 welding verbiage). This will require owner/operator to perform weld repairs in accordance with F1193 requirements (AWS, ASME, or equivalent including EN with inspections per AWS).

- a. Alan Black explained that he copied the welding language from F2291 and renumbered it to fit F770. He asked however, if we shouldn't simply reference F2291 and F1193 rather than copy the language.
- b. Attendees on the call agreed.
- c. Alan agreed to send out a revision.

6) The meeting concluded with no additional business or discussion other than to note:

Upcoming meetings will be 11 AM PDT on the Wednesdays of January 10 and February 7
Following those will be the ASTM F24 meeting in New Orleans on February 14 - 17.

Call / WebEx participants:

Alan Black	Tony Claassen	Mark Kumagai	Michelle Faulk
Mike Mehlhorn	Monty Jasper	Nicola Sobol	Rich Achard
Sonny Silva	Several unidentified call-in attendees		

Attachment 2

Tony's Update to Task #1B

New Language => F770

6.1.2 Records of all maintenance work, major modifications, and other information as appropriate shall be maintained and made available to those authorized to examine them.

6.4 Non-Destructive Testing...

6.5 Welding...

~~6.5.6 Maintenance Records—Records of all maintenance work, major modifications, and other information as appropriate shall be maintained pursuant to the owner/operator's record retention policy or as required by the local authority having jurisdiction. These records shall be made available to those authorized to examine them.~~

T Claassen

Attachment 3

Nicola's Update to Task #2

Some slightly amended wording for Task 2 as detailed below.

Previous suggested new wording in red.

New changes in blue.

F2291

5.6 Drawings and Records:

5.6.3 Documentation supplied to the manufacturer, buyer, owner, or operator shall be complete and adequate for proper installation, maintenance, inspection, and operation of the amusement ride, device, or major modification. Documentation supplied must enable the receiver to understand and manage residual risks as identified by the ride analysis (as detailed in 5.1)

5.7 Regulatory Body Review Documents:

5.7.1 When the approval of the amusement ride, device, or major modification design is required by a regulatory authority, the following documents are typically made available for review:

5.7.1.1 General assembly drawings,

5.7.1.2 Facility interface drawings and related load calculations,

5.7.1.3 Operations, maintenance, and assembly instructions, and

5.7.1.4 Information otherwise called for in accordance with the guidelines in Practice F1193.

5.7.1.5 Ride analysis, as detailed in 5.1

F1193

11. Operational Instruction Requirements

11.1 The manufacturer of an amusement ride or device shall provide, with delivery of each ride or device, documented, recommended operating instructions in the English language. These instructions shall include, but not be limited to the following:

11.1.1 Description of the ride or device operation, including the function and operation of its major components.

11.1.1.1 Description of the motion(s) of the ride or device during operation.

11.1.1.2 Description of the recommended passenger loading procedures during operation, including recommended seating, where applicable.

11.1.2 Recommended safety procedures and instructions, and information about safety equipment pertaining to patrons and ride or device operators and attendants.

11.1.2.1 Maximum total passenger weight and maximum number of passengers by carrier unit or ride total.

11.1.2.2 Description of the passenger restraint system, its recommended use and operation.

11.1.2.3 Ride or device operator and attendant safety check: recommended visual or other inspections to be performed by ride or device operators and attendants prior to and during each ride or device cycle.

11.1.2.4 Instructions to the patron: recommended information that should be made available to each patron of the ride or device.

11.1.2.5 Recommendations for operational restriction relating to environmental conditions such as wind, rain, or temperature fluctuation.

11.1.3 Manufacturer's recommended ride or device operating procedures, including the location of ride or device operators and attendants.

11.1.3.1 Description of the recommended, daily preopening inspection to be performed by ride or device operator(s) and attendants that is in addition to previously performed maintenance or other inspections.

11.1.3.2 Description of the recommended ride or device operator(s) and attendants positions and functions.

Attachment 3

Nicola's Update to Task #2

- 11.1.3.3 Description of the recommended series of steps, to be followed in a definite order, to complete the operation of the ride or device.
- 11.1.4 Manufacturer's recommended emergency procedures.
 - 11.1.4.1 Recommended evacuation procedures for the ride or device.
 - 11.1.4.2 Use of emergency power equipment, if provided with the ride or device.
 - 11.1.4.3 Description of any emergency equipment that is provided with the ride or device, and its uses.
 - 11.1.4.4 Description of any emergency procedure made necessary by an interruption of power, and restart procedures.
 - 11.1.4.5 The documentation supplied must enable the owner / operator to understand and manage residual risks as identified by the ride analysis (as detailed in F2291, 5.1)

13. Maintenance Procedure Requirements

- 13.1 The manufacturer of an amusement ride or device shall provide, with delivery of each ride or device, documented maintenance instructions in the English language. These instructions shall include, but not be limited to, the following:
 - 13.1.1 Description of the ride or device operation, including the function and operation of its major components.
 - 13.1.1.1 Description of the designed motion(s) of the ride or device during operation.
 - 13.1.2 Description of the recommended procedures for installation, setup, disassembly, and transportation of an amusement ride or device.
 - 13.1.3
 - 13.1.3.1 Recommended types and specifications of lubricants.
 - 13.1.3.2 Recommended frequency of lubrication.
 - 13.1.3.3 A lubrication drawing, chart, or instruction, showing the location of lubrication points.
 - 13.1.3.4 Recommended special method of lubrication, where applicable.
 - 13.1.4 Description of the recommended daily, preopening inspection to be performed and identification of special care areas and recommended procedures for inspection and maintenance of these areas.
 - 13.1.5 Description, including frequency, of recommended maintenance inspections and testing, other than daily preopening inspection.
 - 13.1.5.1 Recommended wear limits or tolerances, where deemed necessary by the manufacturer.
 - 13.1.5.2 Recommended operational tests, along with minimum intervals for these tests to be performed, that will allow the owner/operator of the ride or device to determine whether a given ride or device is operating within recommended prescribed operational limits.
 - 13.1.5.3 Where applicable, recommended non-destructive testing along with appropriate acceptance criteria, including suggested frequency and the special parts of areas to be tested.
 - 13.1.5.4 Tests recommended pursuant to 13.1.5 shall meet the following criteria:
 - (1) The tests shall have been performed satisfactorily by the manufacturer prior to the sale of the amusement ride or device,
 - (2) The test shall be a test that the amusement ride or device, or element, can reasonably be expected to pass during the expected life of the amusement ride or device, or element, assuming recommended maintenance and operating procedures have been followed, and
 - (3) The test shall be a test that is reasonable, and that the owner/operator can reasonably be expected to be competent to perform or cause to be performed.
 - 13.1.6 Recommended specifications for the use of replacement fasteners, and recommended torque requirements for fasteners, where applicable. If appropriate, precautionary information will be provided relating to the continued use of fasteners that have been loosened or retorqued.
 - 13.1.7 Schematics of electrical power, lighting, controls, and other systems, including location charts and troubleshooting guide, where applicable.

Attachment 3

Nicola's Update to Task #2

- 13.1.7.1 Description of recommended maintenance procedures for electrical components.
- 13.1.7.2 The name of the component manufacturer and appropriate identification number or specifications, or both, will be provided for electrical components used within the amusement ride or device.
- 13.1.7.3 Each electrical component used within the amusement ride or device will be assigned an individual identification number, symbol, or code to facilitate its location and identity on the electrical schematics.
- 13.1.8 Schematics of hydraulic and pneumatic systems, including recommended pressures, location of components, line specification, fitting specification, type of fluid, location chart, and troubleshooting guide, where applicable.
 - 13.1.8.1 Description of recommended maintenance procedures for hydraulic and pneumatic systems and components.
- 13.1.9 List of parts used in the assembly of the ride or device, or drawings showing component parts and their use.
- 13.1.10 Recommended procedures to be followed in the event of an extended period of non-operation or storage, or both.
- 13.1.11 Description of recommended assembly and disassembly techniques and procedures, pertaining to specific components, as deemed necessary by the manufacturer.
- 13.1.12 Recommended restrictions and special procedures, lubricants, materials, or equipment that may be necessary because of environmental conditions.
- 13.1.13 Other recommendations known to the manufacturer and specific to certain serial numbered rides or devices.
- 13.1.14 The documentation supplied must enable the owner / operator to understand and manage residual risks as identified by the ride analysis (as detailed in F2291, 5.1)

F770

4. Owner/Operator's Responsibility

- 4.1 Each owner/operator shall prepare an Operating Document for each amusement ride or device based on the recommended instructions and specifications provided by the manufacturer. This Operating Document shall be made available to each amusement ride or device operator and attendant. The Operating Document shall include but not be limited to:
 - 4.1.1 Specific amusement ride or device operation policies and procedures with pertinent information from the manufacturer's instructions, including:
 - 4.1.1.1 Description of the amusement ride or device operation.
 - 4.1.1.2 Specific duties of each assigned operator(s) and attendant(s) position(s) of the amusement ride or device.
 - 4.1.1.3 General safety procedures.
 - 4.1.1.4 Instructions on specific procedures to follow in the event of unusual conditions or an interruption of operation, including an Evacuation Plan outlined in 4.4.
 - 4.1.1.5 Additional instructions from the owner/operator.
 - 4.1.2 Specific emergency procedures in the event of an abnormal condition or an interruption of service.
 - 4.1.3 The Operating Document must consider how to manage residual risks which, whilst identified by the designer/engineer's ride analysis (as detailed in F2291, 5.1), are outlined in manufacturer supplied operating instructions (as detailed in F1193, section 11)

Attachment 3

Nicola's Update to Task #2

6. Maintenance Program Requirements

6.1 Each owner/operator of an amusement ride or device shall read and become familiar with the contents of the manufacturer's maintenance instructions and specifications when received, as provided in 3.1. Based on the manufacturer's recommendations, each owner/operator shall implement a program of maintenance, testing, and inspection providing for the duties and responsibilities necessary in the care of each amusement ride or device. This program of maintenance shall include a checklist to be made available to each person performing the regularly scheduled maintenance on each ride or device. The owner/operator's checklist (on a ride-by-ride basis) shall include but not be limited to:

6.1.1 Description of preventive maintenance assignments to be performed.

6.1.2 Description of inspections to be performed.

6.1.3 Special safety instructions, where applicable.

6.1.4 Any additional recommendations of the owner/ operator.

6.1.5 The maintenance program must consider how to manage residual risks which, whilst identified by the designer/engineer's ride analysis (as detailed in F2291, 5.1), are outlined in manufacturer supplied maintenance instructions (as detailed in F1193, section 13)

Nicola Sobol

Health, Safety and Security Director (LEGOLAND Division)

Attachment 4

Eric's Update to Task #3

New Language

EVO GROUP II - TASK #3

Require manufacturers to provide owner/operators thickness of structural materials in supplied drawings.

BACKGROUND

The Corrosion Severity Algorithm mentioned in the proposed ASTM language below, originates from a report from the Air Force Aeronautical Laboratories of a program named PACER LIME from the late 1970's. The purpose from the algorithm was an investigation by the Air Force at controlling costs of corrosion prevention and repair on aircraft while maintaining force effectiveness. An algorithm was based on factors that influence corrosion such as proximity to sea salt, rainfall & pollutants. Testing was done at multiple Air Force bases and the algorithm results were found to be in excellent agreement with Air Force maintenance field experience.

CURRENT LANGUAGE (F2291)

2.19 ISO Standard:

ISO 4113 Road Vehicles – Calibration Fluid for Diesel Injection Equipment Second Edition

ISO 4413 Hydraulic fluid power – General rules relating to systems

ISO 4414 Pneumatic Fluid Power General Rules Relating to Systems

ISO 4406 Particle Count Chart

8.14 Nonoperational In Wind – The designer/engineer or manufacturer shall include any restrictions, limitations, or special procedures for nonoperating or out-of-service amusement rides and devices, and their associated components exposed to wind, in the operating and maintenance instructions. See section on Manufacturer's Responsibility of Practice F1193.

8.15 Design:

8.1516.1 A structural analysis shall be performed for each amusement ride or device to verify that there is adequate structural capability in the design.

8.1516.2 The type of calculation or analysis selected shall be a widely recognized and generally accepted engineering practice.

Attachment 4

Eric's Update to Task #3

New Language

PROPOSED LANGUAGE (F2291)

2.19 ISO Standard:

ISO 4113 Road Vehicles – Calibration Fluid for Diesel Injection Equipment Second Edition

ISO 4413 Hydraulic fluid power – General rules relating to systems

ISO 4414 Pneumatic Fluid Power General Rules Relating to Systems

ISO 4406 Particle Count Chart

ISO 8501-1 Preparation of steel substrates before application of paints and related products – Visual assessment of surface cleanliness – Part 1: Rust grades and preparation grades of uncoated steel substrates and of steel substrates after overall removal of previous coatings

8.14 *Nonoperational In Wind* – The designer/engineer or manufacturer shall include any restrictions, limitations, or special procedures for nonoperating or out-of-service amusement rides and devices, and their associated components exposed to wind, in the operating and maintenance instructions. See section on Manufacturer's Responsibility of Practice F1193.

8.15 *Corrosion* – In the event of corrosion, the manufacturer shall provide one or more inspection procedures to the owner/operator, based on the ride's physical location and using the Corrosion Severity Algorithm. The inspection procedures may be the following:

- (1) Minimum material thickness for components sensitive to corrosion as determined by the ride analysis.
- (2) Maximum allow corrosion grade as specified in ISO 8501 for any uncoated steel surfaces
- (3) An alternative inspection procedure as determined by the manufacturer and the ride analysis.

8.1516 *Design*:

8.1516.1 A structural analysis shall be performed for each amusement ride or device to verify that there is adequate structural capability in the design.

8.1516.2 The type of calculation or analysis selected shall be a widely recognized and generally accepted engineering practice.

Attachment 4

Eric's Update to Task #3

New Language

This part of ISO 8501 identifies 4 rust grades which are normally found on uncoated steel surfaces and on stored steel surfaces (Figure 1).



Steel surface largely covered with adhering mill scale but little, if any, rust.

A



Steel surface which has begun to rust and from which the mill scale has begun to flake.

B



Steel surface on which the mill scale has rusted away or from which it can be scraped, but with slight pitting visible under normal vision.

C



Steel surface on which the mill scale has rusted away and on which general pitting is visible under normal vision.

D

Figure 1: Representative photographic examples of rust grades

Attachment 4

Eric's Update to Task #3

New Language

CORROSION SEVERITY ALGORITHM (FOR A GIVEN LOCATION)

AA = EXTREMELY SEVERE

A = SEVERE

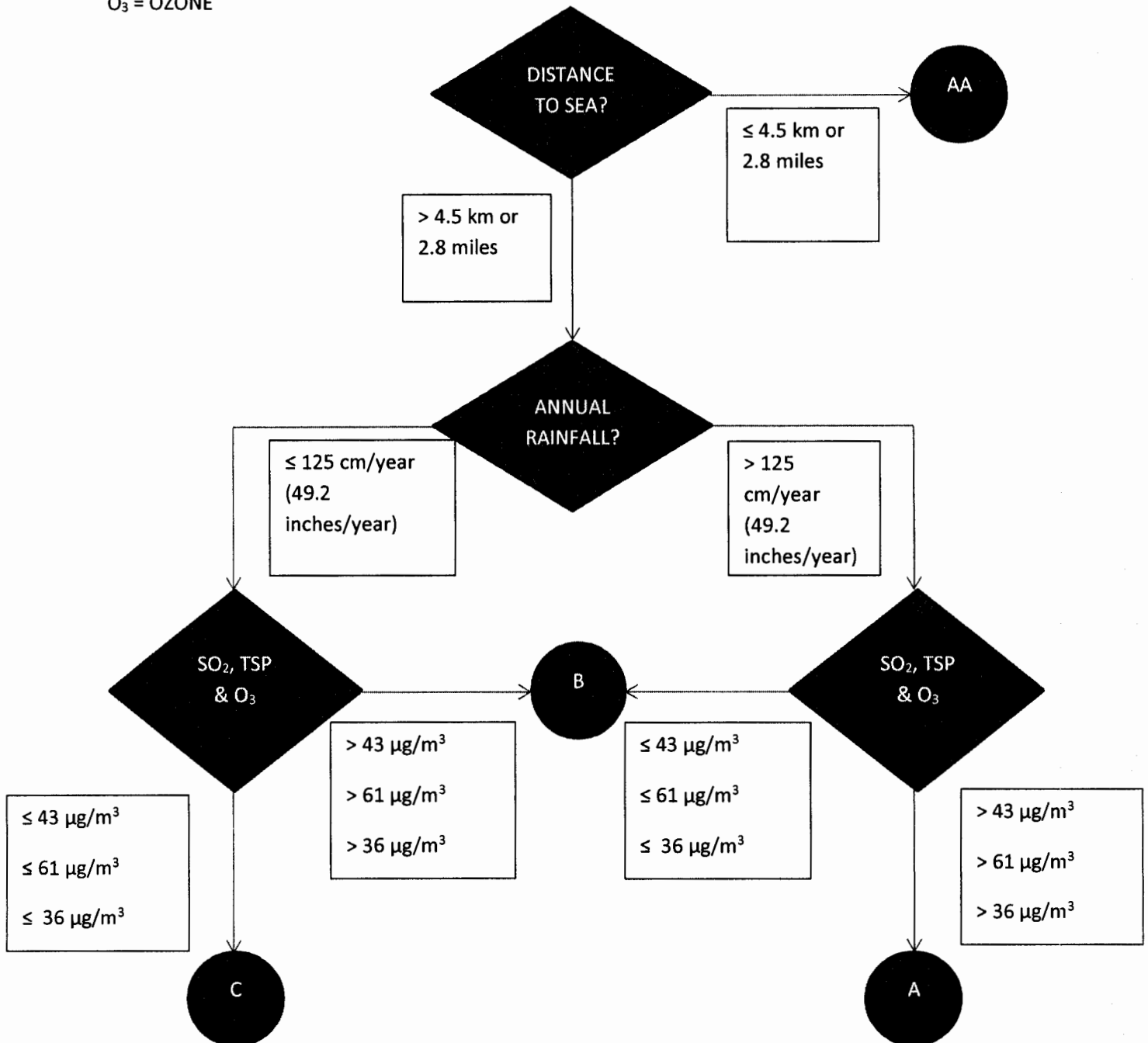
B = MODERATE

C = MILD

SO₂ = SULFUR DIOXIDE

TSP = TOTAL SUSPENDED PARTICLES

O₃ = OZONE



Attachment 5

Alan's Update to Task #4

F2291 15. Welding => F770 New Section 6.5

156.5 Welding

156.5.1 Welding procedures shall be in accordance with American National Standards Institute/American Welding Society (ANSI/AWS) or American Society of Mechanical Engineers (ASME), or equivalent standards.

156.5.2 All welding including new welds for replacement elements, repairs of existing welds and modifications requiring welds shall be accomplished in accordance with the requirements of F2291 §15

Attachment 6 Ballot Items

Action:	Task #1A
Task:	<i><u>Task #1A -In F1193 Require operators to maintain all records for maintenance and major modification for every amusement ride or device; these records will be made available to any Authority Having Jurisdiction (AHJ).</u></i>
Current Language:	
Proposed Language:	

Attachment 6 Ballot Items

Action:	Task #1B
Task:	<u>Task #1B -In F770 Require operators to maintain all records for maintenance and major modification for every amusement ride or device; these records will be made available to any Authority Having Jurisdiction (AHJ).</u>
Current Language:	<p>12.4 Non-Destructive Testing Requirements:</p> <p>12.4.1 This section pertains to the nondestructive testing of amusement ride and device components as recommended by the manufacturer. These tests shall be performed by a qualified NDT inspector in accordance with Practice E543 or ASNT Recommended Practice SNT-TC-1A, or both. It is not intended to preclude any other schedule of NDT, inspection, or testing.</p>
Proposed Language:	<p>12.4 Non-Destructive Testing Requirements:</p> <p>12.4.1 This section pertains to the nondestructive testing of amusement ride and device components as recommended by the manufacturer. These tests shall be performed by a qualified NDT inspector in accordance with AWS, ASTM, ASNT, EN or ISO. It is not intended to preclude any other schedule of NDT, inspection, or testing.</p> <p>12.4.1.1 All NDT inspectors shall have the required visual acuity tests as required by the certification standard(s)</p>

Attachment 6 Ballot Items

Action:	Task #2
Task:	<i>Require manufacturers to provide ride analysis information to the owner/operator as part of the records for the amusement ride or device.</i>
Current Language:	Information is currently unavailable.
Proposed Language:	<p>F2974 Section #11 Nondestructive (NDT) Audit Program</p> <p>11.1 When performing a nondestructive audit program, the auditor(s) shall:</p> <p>11.1.1 Review all written practices and/or procedures.</p> <p>11.1.2 Review inspector(s) training records and experience logs as applicable</p> <p>11.1.3 Review inspector(s) qualification record(s)</p> <p>11.1.4 Review inspector(s) visual acuity record(s), where applicable.</p> <p>11.1.5 Review equipment calibration records</p> <p>11.1.6 Review consumable certification(s) and expiration</p>

Attachment 6 Ballot Items

Action:	Task #3
Task:	<u>Require manufacturers to provide owner/operators thickness of structural materials in supplied drawings.</u>
Current Language:	Information is currently unavailable.
Proposed Language:	<p>5.1 Auditor(s) shall have sufficient relevant education, experience, and training to properly audit an amusement ride or device as defined in this standard.</p> <p>5.1.1 Auditor(s) shall have adequate visual acuity to properly audit an amusement ride or device. A visual acuity record <i>should/may/shall</i></p> <p>5.2 The auditor must prepare for and comply with all personal health and safety requirements as they pertain to the scope of the audit.</p>

Action:	Task #4
Task:	<u>Add welding requirements within F770 (copy and paste 1193 welding verbiage). This will require owner/operators to perform weld repairs in accordance with F1193 requirements (AWS, ASME, or equivalent including EN with inspections per AWS).</u>
Current Language:	
Proposed Language:	

Action:	#5
Task:	<u>Provide information within Section 12.4 "Non-Destructive Testing Requirements" addressing NDT after expected ride design life has been met. This NDT information should be based off new requirements from F2291.</u>
Current Language:	
Proposed Language:	