

## **3.6 Plant Cabling**

### **1.0 Description**

Plant cabling associated with redundant safety-related circuits is arranged so that a single failure cannot cause malfunctions in redundant divisions that prevent completion of safety-related functions. Separation distances described in this section are for Class 1E cables and raceways containing Class 1E cables.

### **2.0 Arrangement**

2.1 Class 1E cables and cable raceways are marked according to their respective division color code.

2.2 Physical separation or electrical isolation exists between Class 1E divisions and between Class 1E divisions and non-Class 1E cables.

### **3.0 Inspections, Tests, Analyses, and Acceptance Criteria**

Table 3.6-1 lists the plant cabling ITAAC.

**Table 3.6-1—Plant Cabling ITAAC (3 Sheets)**

<b>Commitment Wording</b>		<b>Inspections, Tests, Analyses</b>	<b>Acceptance Criteria</b>
2.1	Class 1E cables and cable raceways are marked according to their respective division color code.	An inspection will be performed.	As-built Class 1E cables and cable raceways are marked according to their respective color code.
2.2	Physical separation or electrical isolation exists between Class 1E divisions and between Class 1E divisions and non-Class 1E cables.	An inspection or an inspection and analysis will be performed.	<p>There is physical separation between raceways containing Class 1E cables of different divisions; and between raceways containing Class 1E cables and raceways containing non-Class 1E cables; or a combination of separation and barriers, or analysis for the following plant areas:</p> <p>a. Within the MCR and RSS (non-hazard area) the minimum separation distances meet one of the following criteria:</p> <ul style="list-style-type: none"> <li>• 1 inch horizontally and 3 inches vertically. Vertical separation may be reduced to 1 inch if the enclosed raceway is below an open raceway.</li> <li>• Circuits routed in an enclosed-to-enclosed configuration the minimum separation is 1 inch horizontally and vertically.</li> </ul>

Table 3.6-1—Plant Cabling ITAAC (3 Sheets)

	Commitment Wording	Inspections, Tests, Analyses	Acceptance Criteria
			<p>b. Within limited hazard plant areas minimum separation distances meet one of the following criteria:</p> <ul style="list-style-type: none"> <li>• 3 feet horizontally and 5 feet vertically.</li> <li>• Circuits routed in an enclosed-to-enclosed configuration the minimum separation is 1 inch horizontally and vertically.</li> <li>• For interactions involving low-voltage power circuits with cable sizes <math>\leq 2/0</math> AWG the minimum separation is 6 inches horizontally and 12 inches vertically. Minimum separation may be reduced to 1 inch horizontally and 3 inches vertically if the circuits in the open configuration in an enclosed-to-open configuration are limited to control and instrumentation circuits</li> <li>• For interactions involving only control and instrumentation cables the minimum separation is 1 inch horizontally and 3 inches vertically. Vertical separation may be reduced to 1 inch if the enclosed raceway is below an open raceway.</li> </ul>

**Table 3.6-1—Plant Cabling ITAAC (3 Sheets)**

	<b>Commitment Wording</b>	<b>Inspections, Tests, Analyses</b>	<b>Acceptance Criteria</b>
			<ul style="list-style-type: none"> <li>c. Circuits that do not meet minimum separation distances have barriers provided between those circuits requiring separation.</li> <li>d. Circuits that do not meet minimum separation distances or have barriers provided between those circuits requiring separation are analyzed.</li> <li>e. Non-Class 1E circuits that are not analyzed and do not meet the minimum separation distances or have barriers providing separation between Class 1E circuits are treated as Class 1E.</li> </ul>