Based on the provided domain information about the Generic Patient-Controlled Analgesia (GPCA) system and the given safety case pattern, I will instantiate the pattern to create a safety case. Here is the instantiated safety case in a hierarchical tree format using dashes (-) to denote different levels:

Assurance Case for Generic Patient-Controlled Analgesia (GPCA) System:

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- G1: Operational safety is verified in GPCA system.

- S1: Argument over the satisfaction of all specs over GPCA system (undeveloped)

- C1: All specs are given by spec.allInstances()

- G2: All operational hazards are mitigated.

- S2: Argument over reliability in all suitable levels of GPCA system (undeveloped)

- S3: Argument over operational hazards

- C2: Operational hazards are given by operational hazard.allInstances()

- G3: Overinfusion is mitigated.

- S4: Argument over the applied scenarios of Overinfusion

- C3: All related scenarios are given by Overinfusion

- G4: Overinfusion is mitigated under Flow rate does not match the programmed rate.

- S5: Argument over all specs related to Flow rate does not match the programmed rate

- C4: All related specs are given by Flow rate does not match the programmed rate.spec.allInstances()

- G5: SR1.1 is appropriate for Flow rate does not match the programmed rate.

- S6: Argument the appropriateness of SR1.1 over properties

- C5: Properties are given by spec.property.allInstances()

- G6: Flow rate sensor is equipped is appropriate for SR1.1

- S7: Argument over the source of the Flow rate sensor is equipped definition

- C6: Source is given by property.source

- G7: FDA standard is appropriate and trustworthy

- Sn1: FDA standard

- G8: Flow rate sensor is equipped definition is sufficient

- Sn2: Flow rate sensor is equipped

- G4: Overinfusion is mitigated under Dose limit exceeded due to excessive bolus requests.

- S5: Argument over all specs related to Dose limit exceeded due to excessive bolus requests

- C4: All related specs are given by Dose limit exceeded due to excessive bolus requests.spec.allInstances()

- G5: SR6.1.3 is appropriate for Dose limit exceeded due to excessive bolus requests.

- S6: Argument the appropriateness of SR6.1.3 over properties

- C5: Properties are given by spec.property.allInstances()

- G6: Dose limit is implemented appropriately is appropriate for SR6.1.3

- S7: Argument over the source of the Dose limit is implemented appropriately definition

- C6: Source is given by property.source

- G7: Expert opinion is appropriate and trustworthy

- Sn1: Expert opinion

- G8: Dose limit is implemented appropriately definition is sufficient

- Sn2: Dose limit is implemented appropriately

- G3: Underinfusion is mitigated.

- S4: Argument over the applied scenarios of Underinfusion

- C3: All related scenarios are given by Underinfusion

- G4: Underinfusion is mitigated under Programmed rate too low.

- S5: Argument over all specs related to Programmed rate too low

- C4: All related specs are given by Programmed rate too low.spec.allInstances()

- G5: SR1.2 is appropriate for Programmed rate too low.

- S6: Argument the appropriateness of SR1.2 over properties

- C5: Properties are given by spec.property.allInstances()

- G6: Programmed rate adjustment is implemented is appropriate for SR1.2

- S7: Argument over the source of the Programmed rate adjustment is implemented definition

- C6: Source is given by property.source

- G7: Previous knowledge is appropriate and trustworthy

- Sn1: Previous knowledge

- G8: Programmed rate adjustment definition is sufficient

- Sn2: Programmed rate adjustment

- G4: Underinfusion is mitigated under Flow rate is less than 90% of the programmed rate setting.

- S5: Argument over all specs related to Flow rate is less than 90% of the programmed rate setting

- C4: All related specs are given by Flow rate is less than 90% of the programmed rate setting.spec.allInstances()

- G5: SR6.1.4 is appropriate for Flow rate is less than 90% of the programmed rate setting.

- S6: Argument the appropriateness of SR6.1.4 over properties

- C5: Properties are given by spec.property.allInstances()

- G6: Period to trigger the underinfusion alarm is 15 minutes is appropriate for SR6.1.4

- S7: Argument over the source of the Period to trigger the underinfusion alarm is 15 minutes definition

- C6: Source is given by property.source

- G7: Expertise opinion is appropriate and trustworthy

- Sn1: Expertise opinion

- G8: Period to trigger the underinfusion alarm is 15 minutes definition is sufficient

- Sn2: Period to trigger the underinfusion alarm is 15 minutes

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This safety case for the GPCA system applies the provided safety case pattern, replacing generic elements with system-specific information about the hazards, scenarios, specifications, properties, and sources relevant to the safety-critical infusion pump.