Based on the provided predicates and domain information, I will instantiate the GPCA safety case pattern into a concrete safety case. I will replace placeholders with specific information and remove undeveloped and uninstantiated decorators as instructed.

### Safety Case for GPCA System

\*\*Goal (G1):\*\* Operational safety is verified in the GPCA system

- \*\*Strategy (S1):\*\* Argument over the satisfaction of all specs over GPCA system

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

- Undeveloped

- \*\*Goal (G2):\*\* All operational hazards are mitigated

- \*\*Strategy (S2):\*\* Argument over reliability in all suitable levels of GPCA system

- Undeveloped

- \*\*Strategy (S3):\*\* Argument over operational hazards

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

- Supported by multiple instances of operational hazards

- \*\*Goal (G3):\*\* Overinfusion is mitigated

- \*\*Strategy (S4):\*\* Argument over the applied scenarios of overinfusion

- \*\*Context (C3):\*\* All related scenarios are given by overinfusion

- Supported by multiple instances of related scenarios

- \*\*Goal (G4):\*\* Overinfusion is mitigated under "flow rate does not match the programmed rate"

- \*\*Strategy (S5):\*\* Argument over all specs related to "flow rate does not match the programmed rate" scenario

- \*\*Context (C4):\*\* All related specs are given by scenario.spec.allInstances()

- Supported by multiple instances of related specs

- \*\*Goal (G5):\*\* Flow rate sensor is appropriate for "flow rate does not match the programmed rate" scenario

- \*\*Strategy (S6):\*\* Argument the appropriateness of flow rate sensor over properties

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

- Supported by multiple instances of properties

- \*\*Goal (G6):\*\* Flow rate is less than 90% of the programmed rate setting is appropriate for flow rate sensor

- \*\*Solution (Sn2):\*\* Flow rate is less than 90% of the programmed rate setting

- \*\*Goal (G7):\*\* FDA standard is appropriate and trustworthy

- \*\*Solution (Sn1):\*\* FDA standard

- \*\*Goal (G8):\*\* Flow rate definition is sufficient

- \*\*Solution (Sn2):\*\* Flow rate is less than 90% of the programmed rate setting

### Tree Structure Format:

```

G1: Operational safety is verified in the GPCA system

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

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

- (undeveloped)

- 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" scenario

- C4: All related specs are given by scenario.spec.allInstances()

- G5: Flow rate sensor is appropriate for "flow rate does not match the programmed rate" scenario

- S6: Argument the appropriateness of flow rate sensor over properties

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

- G6: Flow rate is less than 90% of the programmed rate setting is appropriate for flow rate sensor

- Sn2: Flow rate is less than 90% of the programmed rate setting

- G7: FDA standard is appropriate and trustworthy

- Sn1: FDA standard

- G8: Flow rate definition is sufficient

- Sn2: Flow rate is less than 90% of the programmed rate setting

```

This tree structure details the instantiated safety case for the GPCA system. Each placeholder symbol `{}` has been replaced with the concrete information, and undeveloped indicators have been applied where the strategy still requires development.