To create the instantiated safety case for the Generic Patient-Controlled Analgesia (GPCA) system from the provided safety case pattern, we first replace all placeholders with concrete information specific to the GPCA system and its operational requirements. Below is the expanded assurance case hierarchy constructed from the given safety case pattern:

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

```

- G1: Operational safety is verified in GPCA system

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

- C1: All specs are given by specs like flow rate sensor, period settings, and doses.

- G2: All operational hazards are mitigated

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

- S3: Argument over operational hazards like Overinfusion and Underinfusion

- C2: Operational hazards are given by hazards like Overinfusion and Underinfusion.

- 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 fast dose scenario

- S5: Argument over all specs related to fast dose scenario

- C4: All related specs are given by scenarios like exceeding dose limit due to excessive bolus requests.

- G5: flow rate sensor is appropriate for fast dose scenario

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

- C5: Properties are given by specs like flow rate less than 90% of programmed rate.

- G6: Flow rate sensor property of detecting rate less than programmed rate is appropriate

- S7: Argument over the source of the flow rate sensor property definition

- C6: Source is given by FDA standard

- G7: FDA standard is appropriate and trustworthy

- Sn1: FDA regulatory compliance report

- G8: Flow rate sensor property definition is sufficient

- Sn2: Technical specification document

- G3.2: Underinfusion is mitigated

- G4.2: Underinfusion is mitigated under delayed alarm scenario

- G5.2: period setting of 15 minutes is appropriate for delayed alarm scenario

- G6.2: Period setting property of triggering underinfusion alarm in 15 minutes is appropriate

```

In this tree representation:

- Each level of indentation (-) represents a hierarchical element, starting from the top Goal (G1).

- The nested elements reflect the structure of SupportedBy relationships, where strategies (Sx) connect various goals (Gx) and contexts (Cx) expand on elements pertinent to the strategies and goals.

- Solutions (Snx) are evidence that supports justifications for goals, concerning the source and sufficiency of definitions.

For clarity:

- Placeholder elements like `{system}` or `{operational hazard}` have been replaced with specific aspects of the GPCA system, such as "GPCA system" and particular hazards "Overinfusion" and "Underinfusion".

- Context elements are detailed with references to specifications like "flow rate sensor" and scenarios "fast dose scenario".

By removing undeveloped and uninstantiated decorators and filling out placeholders, this instantiate fulfills the transformation from a generic pattern to a specific assurance instance.