Below is the security case for BlueROV2 system instantiated from the given assurance case pattern. Each level in the hierarchy is denoted by a unique indentation using dashes (-).

```plaintext

- G1: Hazards for BlueROV2 addressed in accordance with ALARP principle.

- S1: Argument by risk reduction/elimination of each hazard

- G2: No intolerable risks present in the system.

- C1: Definition of "intolerable"

- S2: Argue that risk posed by any remaining hazards is negligible (undeveloped)

OR

- S3: Argue that no other risks have been identified (undeveloped)

- G3: Risk from Deviation from the operating area has been reduced as low as reasonably practicable

- C2: Assigned severity class is Minor

- S4: Apply ReSonAte to estimate level of risk from hazard condition Deviation from the operating area

- A1: Function Obstacle Detection required by Avoidance Maneuver is available

- G4: Model Avoidance Maneuver accurately describes possible propagation of hazard Deviation from the operating area

- G6: Possible hazard propagation paths correctly captured in BTD (undeveloped)

- G7: Barriers in the BTD correctly describe their respective control action including any required system functions (undeveloped)

- G8: All non-negligible threats have been identified (undeveloped)

- G5: Quantitative risk estimates are accurate and below acceptable threshold

- G9: State probability distribution used for risk estimation is an accurate representation of expected system states (undeveloped)

- G10: Estimated probability of Collision is below allowable threshold for severity class

- Sn1: Estimated risk level 10^-3 per hour

- G3: Risk from Obstacle encounter has been reduced as low as reasonably practicable

- C2: Assigned severity class is Major

- S4: Apply ReSonAte to estimate level of risk from hazard condition Obstacle encounter

- A1: Function Command Authority required by Emergency Stop is available

- G4: Model Emergency Stop accurately describes possible propagation of hazard Obstacle encounter

- G6: Possible hazard propagation paths correctly captured in BTD (undeveloped)

- G7: Barriers in the BTD correctly describe their respective control action including any required system functions (undeveloped)

- G8: All non-negligible threats have been identified (undeveloped)

- G5: Quantitative risk estimates are accurate and below acceptable threshold

- G9: State probability distribution used for risk estimation is an accurate representation of expected system states (undeveloped)

- G10: Estimated probability of Collision is below allowable threshold for severity class

- Sn1: Estimated risk level 10^-3 per hour

- G3: Risk from Loss of pipeline has been reduced as low as reasonably practicable

- C2: Assigned severity class is Minor

- S4: Apply ReSonAte to estimate level of risk from hazard condition Loss of pipeline

- A1: Function Avoidance Logic required by Emergency Stop is available

- G4: Model Emergency Stop accurately describes possible propagation of hazard Loss of pipeline

- G6: Possible hazard propagation paths correctly captured in BTD (undeveloped)

- G7: Barriers in the BTD correctly describe their respective control action including any required system functions (undeveloped)

- G8: All non-negligible threats have been identified (undeveloped)

- G5: Quantitative risk estimates are accurate and below acceptable threshold

- G9: State probability distribution used for risk estimation is an accurate representation of expected system states (undeveloped)

- G10: Estimated probability of Collision is below allowable threshold for severity class

- Sn1: Estimated risk level 10^-3 per hour

```

### Explanation

The initial pattern was instantiated by replacing placeholders and removing decorators as follows:

- `{A :: System}` replaced with "BlueROV2"

- `{B:: Hazard}`: Each identified hazard (Deviation from the operating area, Obstacle encounter, Loss of pipeline) was used.

- `{S:: BTD}`: Specific BowTie Diagrams (BTDs) such as "Avoidance Maneuver" and "Emergency Stop".

- `{C:: Hazard.Severity}`: Specific severity levels ("Minor" and "Major").

- `{T: Function}`: Specific required functions (Obstacle Detection, Command Authority, and Avoidance Logic).

- `{R:: Hazard}`: Replaced with the identified hazards.

- `{U:: Consequence}`: Replaced with "Collision".

- `{V :: attr:RiskEst}`: Risk estimation which was "10^-3 per hour".

If a solution or goal was marked undeveloped or uninstantiated in the pattern, it remains undeveloped in the instantiated assurance case unless specific information changes that.