**Instructions:** 1. Provide detailed attachments as appropriate and check the box to indicate a document is attached.

**Section A**

|  |  |
| --- | --- |
| **Origination** (ddMonyy) (type in expandable field) 04Nov21 | **PCR title**: Risk Reduction and Realization  |
| **WBS No**(s) 1.2, 1.3, 1.4, 1.5 |
| **Type of change** (Check all that apply; give details in Section B.)**Technical** **[x]**  **Schedule** **[ ]** **Cost** **[x]**  **Administrative** **[ ]** **Use of contingency funds?** Y **[x]** N [ ]  | **Directed change?** Y **[ ]  Brief reason for change:**       **Level of change** (Level affects signatures needed in Concurrence… section.) **3** [ ]  **2** [x]  **1** [ ]  Project Levels If this PCR requires a phased implementation, check here. [ ]  |

**Section B**

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| --- |
| Summary of change: Allocation of known risk elements including: TPC diffuse lasers (number and power unknown prior to ongoing optical design definition and component selection); TPC module and assembly tech support (unavailability of students due to COVID); TPC FEE (Phase 3 delivery – Diode Protection Network); EMCal Blacks (Techs for additional QA); Inner HCal End Rings (new cost estimate); Calorimeter FEE Trunk Signal Cables (new type, length).   Attachments? Y[x]  |

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| **Technical change**  Description (include interfaces with other elements) TPC FEE diode-protection networks.     Attachments? Y [x]  |

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| **Detailed cost estimate with basis for estimate**  Description with basis        Total change in $K          Attachments? Y [ ]  |

|  |
| --- |
| **Cost baseline impact** Orig. cost, $K 22,198.7 Est. revised, $K 24,309.8 Est. change, $K 2,111.1 **Final budgeted cost, $K 24,309.8** |

Description       Attachments? Y [x]  EAC or Risk ID # sPH\_TPC\_012, sPH\_TPC\_010, sPH\_CalEl\_014

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| --- |
| **Schedule impact**  NoAttachments? Y [ ]  |

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| **Administrative impact** Labor costs [ ]  Material costs [ ]  Changes WBS dictionary? Y [ ]  N [x]  if Y, highest **WBS** **level** affected: 4 [ ]  3 [ ]  2 [ ]  |

Major(>$25K) procurement [ ]  Description        Documentation update required? Y [ ]  N [ ]          Attachments? Y [ ]

**Section C**

**Funding source and impacts on funding and contracts**  MIE Contingency ($K)

|  |  |  |
| --- | --- | --- |
|  | Before: |  $4,801.3 |
|  This requisition:  | $ (2,111.1) |
| New net: | $ 2,690.2 |

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **MIE Cost Baseline in $K** |  | FY19 | FY20 | FY21 | FY22 | FY23 | TOTAL |
| **Baseline Proposed Change (BCWS)** |  |       |       | $2,109.1 | $2.0 |       | $2,111.1 |
| **Total Project Cost (TPC) in $K** | Baseline DOE PCR       | Change | Proposed Baseline PCR       |
|  |  |  |  |
| **WBS 1.1 sPHENIX Project Management** | $1,951.7 |       | $1,951.7 |
| **WBS 1.2 sPHENIX Time Projection Chamber** | $4,180.1 | $522.3 | $4,702.5 |
| **WBS 1.3 sPHENIX EMCal** | $5,255.1 | $533.9 | $5,789.0 |
| **WBS 1.4 sPHENIX HCal** | $4,033.1 | $127.7 | $4,160.8 |
| **WBS 1.5 sPHENIX Calorimeter Electronics** | $5,363.5 | $921.2 | $6,290.6 |
| **WBS 1.6 sPHENIX DAQ & Trigger** | $1,245.1 |       | $1,245.1 |
| **WBS 1.7 sPHENIX MinBias Trigger Detector** | $170.2 |       | $170.2 |
| **Total Cost** | $22,198.7 | $2,111.1 | 24,309.8 |
| **MIE Contingency** | $4,801.3 | ($2,111.1) | $2,690.2 |
| **Total Project Costs**  | $27,000.0 |       | $27,000.0 |

**Concurrence and approvals**

The originator’s name should be typed in the space provided (27-character limit).

 A Level 4 PCR requires concurrence of (sPHENIX Project Controls Manager), and approval from the sPHENIX Project Manager.

A Level 3 PCR requires concurrence of (sPHENIX Project Controls Manager, sPHENIX Resource Coordinator, sPHENIX Project Manager) and approval from the sPHENIX Project Director.

A Level 2 PCR requires concurrence of (sPHENIX Project Controls Manager, sPHENIX Resource Coordinator, sPHENIX Project Manager, sPHENIX Project Director) and approval from the Associate Lab Director NPP.

A Level 1 PCR requires all previous concurrence of (sPHENIX Project Controls Manager, sPHENIX Resource Coordinator, sPHENIX Project Manager, sPHENIX Project Director, Associate Lab Director NPP) and approval from the Lab Director.

A Level 1 PCR requires Level 1 concurrences and approval and in addition approval of the DOE Program Office and BHSO Official(s) named below.

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| --- | --- | --- | --- |
| **Originator/CAM** |  | T. Hemmick, C. Woody, J. Lajoie, E. Mannel |  |
| **sPHENIX Level 2 Manager** |  | T. Hemmick, C. Woody, J. Lajoie, E. Mannel |  |
| **sPHENIX Project Controls Manager** |  | Irina Sourikova |  |
| **sPHENIX Resource Coordinator** |  | Cathleen Lavelle |  |
| **sPHENIX Project Manager** |  | Glenn Young |  |
| **sPHENIX Project Director** |  | Ed O’Brien |  |
| **Associate Lab Director NPP** |  | Berndt Mueller |  |
| **Lab Director**  |  | Doon Gibbs |  |

 Official’s typed name Signature Date (ddMonyy)

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Level 1 Change**DOE/SC Change Action |  |  |  |  |  |  |

 Brookhaven Site Office (BHSO)

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Level 1 Change** DOE/SC Change Action |  |       |  |  |  |  |

 Federal Program Manager (NP)