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| Traveler Title | Si Diodes Receiving Inspection |
| Traveler Abstract | Incoming inspection and VTA testing of silicon diodes temperature sensors  |
| Traveler ID | P1-TSTMS-DIO-INSP |
| Traveler Revision  | R1 |
| Traveler Author | L. King |
| Traveler Date | 06-Aug-2020 |
| NCR Informative Emails | forehand |
| NCR Dispositioners | king,kdavis |
| D3 Emails | king,kdavis,forehand |
| Approval Names | L. King | K. Davis |  | 1. Reilly
 |
| Approval Date |  |  |  |  |
| Approval Signatures |  |  |  |  |
| Approval Title | Author | Reviewer | Reviewer | Project Manager |

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| References | List and Hyperlink all documents related to this traveler. This includes, but is not limited to: safety (THAs, SOPs, etc), drawings, procedures, and facility related documents. |
| VTA SOP | Procedure : [CP-C100-CM-INSP-DIO](https://jlabdoc.jlab.org/docushare/dsweb/Get/Document-41378/CP-C100-CM-INSP-DIO.docx) | Excel spreadsheet template for C100-CM-INSP-DIO |  |  |
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| Revision Note |  |
| R1 | Initial release of this Traveler. |

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| Step No. | Instructions | Data Input |
| 1 | Record Date, Si diode vendor, Si diode type. Record name of Technician who manipulates and populates trays with Si diodes. | [[DateTime]] <<TIMESTAMP>>[[Vendor]] <<TEXT>>[[SiDtype]] <<TEXT>>[[Tehnician]] {{Steve,Dia}} <<SELECT>> |
| 2 | Inspect shipping container for signs of damage. If the container is damaged (option YES), comment status in the text box provided. | [[ContainerNoDamages]] <<YESNO>>[[ContainerDamaged]] <<COMMENT>> |
| 3 | Verify that the vendor's inspection data is included in the shipment.   | [[InspectionDataIncluded]] <<YESNO>> |
| 4 | Scan and upload all documentation that arrives inside sensor box:Packing SlipCertificate of complianceSilicon Diode Calibration Data  | [[ScanDone]] <<YESNO>>[[PackingSlip]] <<FILEUPLOAD>>[[CertificateOfCompliance]] <<FILEUPLOAD>>[[CalibrationData]] <<FILEUPLOAD>> |
| 5 | Record the total number of Si diodes and sequential serial numbers to be tested in the Excel spread sheet template; upload the Excel file and enter Batch Serial No. | [[No\_SiDBatchN]] <<FLOAT>>[[Batch\_N\_Data\_xlsx]] <<FILEUPLOAD>>[[BatchSN]] <<SN>> |
| 6 | Record the instruments to be used for Si diode testing.Instrument calibration O.K? If NO option is chosen input pertinent information in the comment box provided. If Other option is selected for instrument(s) used during cryo-testing, specify in the comment box provided on the right. | [[Instrument]] {{Cryocon,ShoreLake, Both, Other}} <<SELECT>>[[InstrumentCalibrationOK]] <<YESNO>>[[InstrumentBadCalibration]] <<COMMENT>> |
| 7 | Populate the test trays with SiD. Record time and Si diode response at room temperature. Check if all Si diodes assembled on the test trays read room temperature. If the NO option is chosen, replace these Si diodes with new ones, record the number and serial numbers of the "bad" Si diodes in the comment box provided. | [[Date\_Time]] <<TIMESTAMP>>[[SiDGoodatRT]] <<YESNO>>[[SiDBadatRT]] <<INTEGER>>[[SNBadSiDatRT]] <<COMMENT>> |
| 8 | Record Test Date, Dewar No and Test Operators | [[TestDate]] <<TIMESTAMP>>[[DewarNo]] {{1,2}} <<SELECT>>[[Operator]] {{Mircea,Pete,TBass}} <<SELECT>>[[Operator]] {{Mircea,Pete,TBass}} <<SELECT>> |

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| Step No. | Instructions | Data Input |
| 9 | Enter LabView file name for Batch\_N\_Date to be used for data acquisition. | [[Batch\_N\_date]] <<TEXT>> |
| 10 | Once the test stand is inserted in Dewar, record response of the Si diodes at room temperature per the Procedure. Check if all Si diodes read-back room temperature. If the NO option is chosen, record how many and the serial numbers of the Si diodes in the comment box provided. | [[Date\_Dewar]] <<TIMESTAMP>>[[SiDGoodAtRTInDewar]] <<YESNO>>[[SiDBadatRTinDewar]] <<INTEGER>>[[SNSiDBadatRTinDewar]] <<COMMENT>> |
| 11 | Perform measurements at different temperatures as specified in Procedure. (RT, ice, 77 K, 50K, 4K and 2.07K). Record in the comment box on the right, serial number (SN) for SiD out of specification s. During cryo testing bellow 4K, record Dewar helium bath liquid level, Dewar temperature measured with reference SiD and baratron pressure and Si diodes response conform Procedure. | [[DewarLHeLevel]] <<FLOAT>>(cm)[[DewarTempK]] <<FLOAT>>(K)[[DewarPressureTorr]] <<FLOAT>>(Torr)[[SN\_SiDBadAtLowTInDewar]] <<COMMENT>>[[SN\_SiDBadAt2\_07InDewar]] <<COMMENT>> |
| 12 | Perform a long term run at constant temperature 2.07 K conform specifications in Procedure. Record, date and time of this test, final liquid He level, Dewar temperature, Dewar pressure, number of hours of constant temperature test. Record in the comment box provided on the right number of diodes which went out of specification during this test. | [[Date\_Long\_RunAt2\_07K]] <<TIMESTAMP>>[[Total\_hours]] <<SCINOT>>(h)[[DewarLHe\_Level]] <<FLOAT>>(cm)[[DewarTemp\_K]] <<FLOAT>>(K)[[DewarPressure\_Torr]] <<FLOAT>>(Torr)[[SiD\_responseAt2\_07K]] <<COMMENT>> |
| 13 | Upload the raw (LabView) data file with Si diodes temperature response for Batch\_N\_Raw\_Data. | [[Batch\_N\_Raw\_xlsx]] <<FILEUPLOAD>> |
| 14 | Upload the Word document file with screen copies taken during SiDs cryo-testing. | [[Batch\_N\_Date\_docx]] <<FILEUPLOAD>> |
| 15 | Upload the processed, Excel file generated during Si diode cryotesting with SiDs out of specification being marked (highlighted with yellow color). | [[BatchN\_Data\_xlsx]] <<FILEUPLOAD>> |
| 16 | Have all diodes tested in SiDBatchN passed qualification tests? If the NO option is chosen, record the number and serial numbers of the Si diodes in the comment box provided and launch NCR. | [[SiDBatch\_N\_Date\_Pass]] <<YESNO>>[[SiD\_Out\_Specification]] <<INTEGER>>[[SiDResponseAsTested]] <<COMMENT>> |