C-A OPERATIONS PROCEDURES MANUAL

ATTACHMENT

9.1.11.a General Guideline for C-A Radiation Access-Control System Classification and Application

C-A-OPM Procedures in which this Attachment is used.		
9.1.11		

Hand Processed Changes

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Approved: _____***Signature on File***_____ _____
Collider-Accelerator Department Chairman Date

J.W. Glenn

9.1.11.a General Guideline for C-A Radiation Access-Control System Classification and Application

ABCS –Access/Beam Control System;HFD-Hardwire, fail-safe, dual; HF-Hardwire, fail-safe; AFD-Active, fail-safe, dual; AF-Active, fail-safe; H-Hardwired: AD-Active, Dual; & A-Active

C-A Class Area Name with Access as per 10CFR835	Radiation Level (Allowed potential whole body dose with access)	Equivalent 30 GeV Large Beam Proton Fluence $P/cm^2/hr)^{a,b,c}$	Access When Beam Enabled	Sweep/Reset Authority	Area Enclosure	C-A Class (Radiation Level) *C-A Class without Access*	Minimum ABCS *Additional ABCS at this Class Level*	Purpose of ABCS for Operational Class *Purpose of ABCS for Class*
Class I Very High Radiation Area -	>500 rad/hr [a]	$>3.9x10^9$	Absolute Prohibition	MCR Operator or RSC Designate	Impregnable Enclosure, Dual Interlocked Gates	I *Not Applicable*	HFD *Not Applicable*	Preventing Access or Beam Enablement *Not Applicable*
Class II High Radiation Area-	<500 rad/hr >50 rem/hr	$<3.9x10^9$ $>1.1x10^8$	Special RCD Approved Procedure	RSC Designate	Fully Enclosed ,Dual Interlocked Gates	II *I*	HFD *Not Specified*	Controlling Access or Beam Enablement *Preventing exposure to these levels*
Class III High Radiation Area -	<50 rem/hr >5 rem/hr	$<1.1x10^8$ $>1.1x10^7$	RCD Technician Supervision	RSC Designate	Walls or Fences, Interlocked Gates	III *II* *I*	HF *AF* *HF*	Controlling Access or Beam Enablement *Preventing exposure to these levels* *Preventing exposure to these levels*
Class IV High Radiation Area-	<5 rem/hr >0.1 rem/hr	$<1.1x10^7$ $>2.3x10^5$	Individual Authorized by the RSC	Individual User May Be Authorized by the RSC	Walls or Fences, Locked Gates	IV *III* *II* *I*	H *AF* *HF* *HFD*	Control Access or Beam Enablement *Preventing exposure to these levels* *Preventing exposure to these levels* *Preventing exposure to these levels*
Class V Radiation Area	<0.1 rem/hr >0.005 rem/hr	$<2.3x10^5$ $>1.1x10^4$	Radiation Worker or Visitor Escorted by Radiation Worker	When Required, Individual User Authorized by the RSC	Fences or, Ropes; Radiation Warning Signs Every 40 ft	V *IV* *III* *II, I*	A *A* *HF* *HFD*	Alarm on Excessive Radiation *Preventing exposure to these levels* *Preventing exposure to these levels* *Preventing exposure to these levels*
Class VI Controlled Area -	<0.005 rem/hr >0.00005 rem/hr	$<1.1x10^4$ $>1.1x10^2$	GERT Trained Individual or Escorted Visitor	Not Required	Signs, Fences or, Ropes at Perimeter; Posted at Entrances	VI *V* *IV* *III* *II, & I*	A *A* *H* *HF* *HFD*	None *Preventing exposure to these levels* *Preventing exposure to these levels* *Preventing exposure to these levels* *Preventing exposure to these levels*

a See section 5.5 for procedures for small beam sizes.

b If the absorbed dose rate is 500 rad/hr or greater, the area is named a "Very High Radiation Area" as per 10CFR835.

cThis is the fluence rate from a beam of 30-GeV protons with size greater than 1000 cm2. It corresponds to the dose rate listed in column two and was obtained by using equations in section 5.4