

```

// ===== PrimaryGeneratorAction.cc Class =====
//
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// Modified by Darren Holland 2020-11-02
// =====
//
// This file generates the particle with the desired energy/energies and
// releases it into a cone toward the detector
// =====
//
#include "B4PrimaryGeneratorAction.hh"
#include "G4RunManager.hh"
#include "G4LogicalVolumeStore.hh"
#include "G4LogicalVolume.hh"
#include "G4Box.hh"
#include "G4Orb.hh"
#include "G4Event.hh"
#include "G4ParticleGun.hh"
#include "G4ParticleTable.hh"
#include "G4ParticleDefinition.hh"
#include "G4SystemOfUnits.hh"
#include "Randomize.hh"
#include "G4GeneralParticleSource.hh"
#include "Settings.hh"

// Create particle gun
B4PrimaryGeneratorAction::B4PrimaryGeneratorAction()
: G4VUserPrimaryGeneratorAction(),
  fParticleGun(0)
{
    // Source Characteristics:
    fParticleGun = new G4GeneralParticleSource;
    // Load particle type (gamma, neutron)
    G4ParticleDefinition* particleDefinition =
G4ParticleTable::GetParticleTable()->FindParticle(Settings::PartType); //
Particle Type
    fParticleGun->SetParticleDefinition(particleDefinition); // Particle
Definition
    // Only one particle at a time
    fParticleGun->SetNumberOfParticles (1); // Number of Particles
}

// Destroy instance
B4PrimaryGeneratorAction::~B4PrimaryGeneratorAction()
{
    delete fParticleGun;
}

void B4PrimaryGeneratorAction::GeneratePrimaries(G4Event* anEvent)
{
    // This function is called at the begining of local run (aka begin by shooting
particle)
    // Set particle direction
    fParticleGun->GeneratePrimaryVertex(anEvent);
}

```