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```
//
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// *****
//
//
// $Id$
//
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//.....ooo00000ooo.....ooo00000ooo.....ooo00000ooo.....ooo00000ooo.....

#ifndef HEPDSWPrimaryGeneratorAction_h
#define HEPDSWPrimaryGeneratorAction_h 1

#include "G4VUserPrimaryGeneratorAction.hh"
#include "G4ParticleGun.hh"
#include "globals.hh"

class G4Event;
class HEPDSWDetectorConstruction;
class HEPDSWPrimaryGeneratorMessenger;

//.....ooo00000ooo.....ooo00000ooo.....ooo00000ooo.....ooo00000ooo.....

class HEPDSWPrimaryGeneratorAction : public G4VUserPrimaryGeneratorAction
{
public:
    HEPDSWPrimaryGeneratorAction(HEPDSWDetectorConstruction*);
    ~HEPDSWPrimaryGeneratorAction();

public:
    void SetDefaultKinematic();
    void SetParticle(G4String part);
    void SetEnergy(G4double ene);
    void SetDummy(G4double Xpos,G4double Ypos,G4double theta);
    void SetPowerLaw(G4double aEmin,G4double aEmax,G4double aGamma);

    inline void SetRandomPosition() { random = true;}
    inline void SetDirectionToCenter() { centerpointing = true;}

    virtual
    void GeneratePrimaries(G4Event*);
    G4ParticleGun* GetParticleGun() {return fParticleGun;};

private:
    G4double SpectrumPowerLaw(G4double Emin,G4double Emax, G4double gamma);

    G4ThreeVector position;
    G4ThreeVector direction;
```

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```
G4ParticleGun*      fParticleGun;
HEPDSWDetectorConstruction* fDetector;
G4bool             random;
G4bool             centerpointing;
G4bool             dummy;
G4bool             powerlaw;

G4double eminPL,emaxPL,gammaPL;

HEPDSWPrimaryGeneratorMessenger* fGunMessenger;
};

//.....ooo00000ooo.....ooo00000ooo.....ooo00000ooo.....ooo00000ooo.....

#endif
```